GenCore version 5.1.6


OM protein - protein search, using sw model

Run on: May 19, 2005, 12:28:47 ; Search time 162 Seconds
(without alignments)
19.099 Million cell updates/sec

Title: US-09-424-080B-1
Perfect score: 42
Sequence: 1 LTEKKYSP 8

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 2105692 seqs, 386760381 residues

Total number of hits satisfying chosen parameters: 2105692

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_16Dec04:*
1: geneseqp1980s:*
2: geneseqp1990s:*
3: geneseqp2000s:*
4: geneseqp2001s:*
5: geneseqp2002s:*
6: geneseqp2003as:*
7: geneseqp2003bs:*
8: geneseqp2004s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | % Query Match | Length | DB | ID | Description |
|---|---|---|---|---|---|---|
| 1 | 42 | 100.0 | 11 | 2 | AAR47561 | Aar47561 Interfero |
| 2 | 42 | 100.0 | 11 | 5 | ABG68834 | Abg68834 Interfero |
| 3 | 42 | 100.0 | 12 | 5 | ABG68850 | Abg68850 Interfero |
| 4 | 42 | 100.0 | 17 | 5 | ABG68867 | Abg68867 DNA encod |
| 5 | 42 | 100.0 | 18 | 2 | AAR47562 | Aar47562 Interfero |
| 6 | 42 | 100.0 | 18 | 5 | ABG68835 | Abg68835 Interfero |
| 7 | 42 | 100.0 | 46 | 5 | AAM50696 | Aam50696 Human mat |
| 8 | 42 | 100.0 | 46 | 5 | AAM50700 | Aam50700 Human mat |
| 9 | 42 | 100.0 | 46 | 5 | AAM50701 | Aam50701 Human mat |
| 10 | 42 | 100.0 | 46 | 5 | AAM50704 | Aam50704 Human mat |
| 11 | 42 | 100.0 | 90 | 3 | AAY55987 | Aay55987 Partial h |
| 12 | 42 | 100.0 | 132 | 6 | ABU52320 | Abu52320 Human GPC |
| 13 | 42 | 100.0 | 132 | 8 | ADL23975 | Adl23975 Human NOV |
| 14 | 42 | 100.0 | 133 | 1 | AAP20109 | Aap20109 Sequence |
| 15 | 42 | 100.0 | 150 | 2 | AAR11799 | Aar11799 Interfero |
| 16 | 42 | 100.0 | 150 | 5 | ABG68840 | Abg68840 Interfero |
| 17 | 42 | 100.0 | 150 | 5 | ABG68842 | Abg68842 Interfero |
| 18 | 42 | 100.0 | 150 | 5 | ABG68841 | Abg68841 Interfero |
| 19 | 42 | 100.0 | 151 | 6 | ABU52319 | Abu52319 Human GPC |
| 20 | 42 | 100.0 | 151 | 8 | ADL23973 | Adl23973 Human NOV |
| 21 | 42 | 100.0 | 159 | 8 | ADO32410 | Ado32410 Human IFN |
| 22 | 42 | 100.0 | 160 | 8 | ADO32408 | Ado32408 Human IFN |
| 23 | 42 | 100.0 | 162 | 1 | AAP50168 | Aap50168 Sequence |
| 24 | 42 | 100.0 | 162 | 5 | ABG68845 | Abg68845 Interfero |
| 25 | 42 | 100.0 | 164 | 8 | ADO32425 | Ado32425 Human IFN |
| 26 | 42 | 100.0 | 164 | 8 | ADO32409 | Ado32409 Human IFN |
| 27 | 42 | 100.0 | 165 | 1 | AAP30687 | Aap30687 Thr14, Me |
| 28 | 42 | 100.0 | 165 | 2 | AAW43390 | Aaw43390 Human int |
| 29 | 42 | 100.0 | 165 | 2 | AAW43382 | Aaw43382 Human int |
| 30 | 42 | 100.0 | 165 | 2 | AAW43386 | Aaw43386 Human int |
| 31 | 42 | 100.0 | 165 | 2 | AAW43387 | Aaw43387 Human int |
| 32 | 42 | 100.0 | 165 | 2 | AAY43492 | Aay43492 A human i |
| 33 | 42 | 100.0 | 165 | 3 | AAY82887 | Aay82887 N-termina |
| 34 | 42 | 100.0 | 165 | 3 | AAY44976 | Aay44976 Human hyb |
| 35 | 42 | 100.0 | 165 | 3 | AAY44828 | Aay44828 Hybrid in |
| 36 | 42 | 100.0 | 165 | 5 | ABG68843 | Abg68843 Interfero |
| 37 | 42 | 100.0 | 165 | 5 | ABG68844 | Abg68844 Interfero |
| 38 | 42 | 100.0 | 165 | 7 | ADF16224 | Adf16224 Human alb |
| 39 | 42 | 100.0 | 165 | 7 | ADF16244 | Adf16244 Human alb |
| 40 | 42 | 100.0 | 165 | 7 | ADF16239 | Adf16239 Human alb |
| 41 | 42 | 100.0 | 165 | 7 | ADF16234 | Adf16234 Human alb |
| 42 | 42 | 100.0 | 165 | 7 | ADH21670 | Adh21670 Human IFN |
| 43 | 42 | 100.0 | 165 | 7 | ADH21675 | Adh21675 Human IFN |
| 44 | 42 | 100.0 | 165 | 7 | ADH21660 | Adh21660 Human IFN |
| 45 | 42 | 100.0 | 165 | 7 | ADH21680 | Adh21680 Human IFN |

ALIGNMENTS

RESULT 1
AAR47561
ID AAR47561 standard; peptide; 11 AA.
XX
AC AAR47561;
XX
DT 25-MAR-2003 (revised)
DT 12-JUL-1994 (first entry)
XX
DE Interferon-receptor binding peptide #4.
XX
KW IFN; cell surface receptor; pharmaceutical carrier molecule;
KW drug delivery; neoplastic tissue; infection;
KW Type 1 human interferon receptor complex.
XX
OS Synthetic.
XX
PN WO9401457-A1.
XX
PD 20-JAN-1994.
XX
PF 06-JUL-1993; 93WO-CA000279.
XX
PR 07-JUL-1992; 92US-00909739.
PR 20-NOV-1992; 92US-00980525.
XX
PA (FISH/) FISH E N.
XX
PI Fish EN;
XX
DR WPI; 1994-034987/04.
XX
PT New interferon receptor-binding peptide(s) - useful for delivering a
PT pharmaceutically active drug to cells, e.g. neoplastic, infected or
PT inflamed tissue cells.
XX
PS Claim 4; Page 35; 51pp; English.
XX
CC The critical clusters of amino acids in the different IFN-alphas and IFN-
CC beta that interact with the Type 1 IFN receptor complex were defined.
CC These critical peptide domains were used to design synthetic peptides
CC AAR47558-R47564 that are useful as carriers for pharmaceutical
CC compositions. (Updated on 25-MAR-2003 to correct PN field.)
XX
SQ Sequence 11 AA;

Query Match 100.0%; Score 42; DB 2; Length 11;
Best Local Similarity 100.0%; Pred. No. 0.3;

```
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db          2 LTEKKYSP 9


RESULT 2
ABG68834
ID   ABG68834 standard; peptide; 11 AA.
XX
AC   ABG68834;
XX
DT   07-OCT-2002  (first entry)
XX
DE   Interferon receptor binding peptide #4.
XX
KW   Cytostatic; virucide; hepatotropic; antiinflammatory; neuroprotective;
KW   immunosuppressive; antiarthritic; cytokine receptor; interferon; IFN;
KW   cancer; haematological malignancy; viral infection; hepatitis; human;
KW   multiple sclerosis; autoimmune disease; arthritis.
XX
OS   Homo sapiens.
XX
PN   WO200244197-A2.
XX
PD   06-JUN-2002.
XX
PF   30-NOV-2001; 2001WO-CA001701.
XX
PR   01-DEC-2000; 2000US-00727388.
XX
PA   (FISH/) FISH E N.
XX
PI   Fish EN;
XX
DR   WPI; 2002-547689/58.
XX
PT   Cytokine receptor binding peptide construct, in particular interferon
PT   receptor binding peptide construct for use as an interferon mimetic,
PT   comprises a cytokine receptor binding domain incorporated in a molecular
PT   scaffold.
XX
PS   Claim 16; Page 62; 105pp; English.
XX
CC   This invention relates to a novel cytokine receptor binding peptide
CC   construct comprising a cytokine receptor binding domain incorporated in a
CC   suitable molecular scaffold so that the scaffold maintains the binding
CC   domain in a configuration suitable for binding to the cytokine receptor.
CC   The peptides of the invention may have cytostatic, virucide,
CC   hepatotropic, antiinflammatory, neuroprotective, immunosuppressive and
CC   antiarthritic activities. A new interferon receptor binding peptide
CC   construct is useful in the manufacture of a medicament as an interferon
CC   (IFN) mimetic. A peptide that mimics the effect of IFN is useful in
CC   medical therapies for cancer, haematological malignancies, viral
CC   infections (hepatitis B or C), multiple sclerosis and autoimmune diseases
CC   such as arthritis, to detect modulators of IFN action, in screening
CC   assays to compare the activity and/or interaction with another molecule
CC   or potential IFN modulator and also in the diagnosis of IFN activity
CC   related disorders. A nucleic acid encoding the peptide of the invention
CC   or is useful for the treatment and therapy of the mentioned medical
CC   conditions. The peptide of the invention has less side effect than those
CC   of native cytokines. The present sequence represents an interferon
CC   receptor binding peptide of the invention
XX
SQ   Sequence 11 AA;

  Query Match             100.0%;  Score 42;  DB 5;  Length 11;
  Best Local Similarity   100.0%;  Pred. No. 0.3;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db          2 LTEKKYSP 9


RESULT 3
ABG68850
ID   ABG68850 standard; peptide; 12 AA.
XX
AC   ABG68850;
XX
DT   07-OCT-2002  (first entry)
XX
DE   Interferon receptor binding peptide #9.
XX
KW   Cytostatic; virucide; hepatotropic; antiinflammatory; neuroprotective;
KW   immunosuppressive; antiarthritic; cytokine receptor; interferon; IFN;
KW   cancer; haematological malignancy; viral infection; hepatitis; human;
KW   multiple sclerosis; autoimmune disease; arthritis.
XX
OS   Homo sapiens.
XX
PN   WO200244197-A2.
XX
PD   06-JUN-2002.
XX
PF   30-NOV-2001; 2001WO-CA001701.
XX
PR   01-DEC-2000; 2000US-00727388.
XX
PA   (FISH/) FISH E N.
XX
PI   Fish EN;
XX
DR   WPI; 2002-547689/58.
XX
PT   Cytokine receptor binding peptide construct, in particular interferon
PT   receptor binding peptide construct for use as an interferon mimetic,
PT   comprises a cytokine receptor binding domain incorporated in a molecular
PT   scaffold.
XX
PS   Claim 16; Page 62; 105pp; English.
XX
CC   This invention relates to a novel cytokine receptor binding peptide
CC   construct comprising a cytokine receptor binding domain incorporated in a
CC   suitable molecular scaffold so that the scaffold maintains the binding
CC   domain in a configuration suitable for binding to the cytokine receptor.
CC   The peptides of the invention may have cytostatic, virucide,
CC   hepatotropic, antiinflammatory, neuroprotective, immunosuppressive and
CC   antiarthritic activities. A new interferon receptor binding peptide
CC   construct is useful in the manufacture of a medicament as an interferon
CC   (IFN) mimetic. A peptide that mimics the effect of IFN is useful in
CC   medical therapies for cancer, haematological malignancies, viral
CC   infections (hepatitis B or C), multiple sclerosis and autoimmune diseases
CC   such as arthritis, to detect modulators of IFN action, in screening
CC   assays to compare the activity and/or interaction with another molecule
CC   or potential IFN modulator and also in the diagnosis of IFN activity
CC   related disorders. A nucleic acid encoding the peptide of the invention
CC   or is useful for the treatment and therapy of the mentioned medical
CC   conditions. The peptide of the invention has less side effect than those
CC   of native cytokines. The present sequence represents an interferon
CC   receptor binding peptide of the invention
XX
SQ   Sequence 12 AA;

  Query Match             100.0%;  Score 42;  DB 5;  Length 12;
  Best Local Similarity   100.0%;  Pred. No. 0.33;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db          3 LTEKKYSP 10


RESULT 4
```

```
ABG68867
ID   ABG68867 standard; peptide; 17 AA.
XX
AC   ABG68867;
XX
DT   07-OCT-2002  (first entry)
XX
DE   DNA encoding IFN-con IRRP3 peptide #2.
XX
KW   Cytostatic; virucide; hepatotropic; antiinflammatory; neuroprotective;
KW   immunosuppressive; antiarthritic; cytokine receptor; interferon; IFN;
KW   cancer; haematological malignancy; viral infection; hepatitis; human;
KW   multiple sclerosis; autoimmune disease; arthritis.
XX
OS   Synthetic.
XX
PN   WO200244197-A2.
XX
PD   06-JUN-2002.
XX
PF   30-NOV-2001; 2001WO-CA001701.
XX
PR   01-DEC-2000; 2000US-00727388.
XX
PA   (FISH/) FISH E N.
XX
PI   Fish EN;
XX
DR   WPI; 2002-547689/58.
DR   N-PSDB; ABK97830.
XX
PT   Cytokine receptor binding peptide construct, in particular interferon
PT   receptor binding peptide construct for use as an interferon mimetic,
PT   comprises a cytokine receptor binding domain incorporated in a molecular
PT   scaffold.
XX
PS   Example 8; Page 52; 105pp; English.
XX
CC   This invention relates to a novel cytokine receptor binding peptide
CC   construct comprising a cytokine receptor binding domain incorporated in a
CC   suitable molecular scaffold so that the scaffold maintains the binding
CC   domain in a configuration suitable for binding to the cytokine receptor.
CC   The peptides of the invention may have cytostatic, virucide,
CC   hepatotropic, antiinflammatory, neuroprotective, immunosuppressive and
CC   antiarthritic activities. A new interferon receptor binding peptide
CC   construct is useful in the manufacture of a medicament as an interferon
CC   (IFN) mimetic. A peptide that mimics the effect of IFN is useful in
CC   medical therapies for cancer, haematological malignancies, viral
CC   infections (hepatitis B or C), multiple sclerosis and autoimmune diseases
CC   such as arthritis, to detect modulators of IFN action, in screening
CC   assays to compare the activity and/or interaction with another molecule
CC   or potential IFN modulator and also in the diagnosis of IFN activity
CC   related disorders. A nucleic acid encoding the peptide of the invention
CC   or is useful for the treatment and therapy of the mentioned medical
CC   conditions. The peptide of the invention has less side effect than those
CC   of native cytokines. The present sequence represents an interferon
CC   receptor binding peptide of the invention
XX
SQ   Sequence 17 AA;

  Query Match             100.0%;  Score 42;  DB 5;  Length 17;
  Best Local Similarity   100.0%;  Pred. No. 0.48;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db         10 LTEKKYSP 17


RESULT 5
AAR47562
ID   AAR47562 standard; peptide; 18 AA.
XX
AC   AAR47562;
XX
DT   25-MAR-2003  (revised)
DT   12-JUL-1994  (first entry)
XX
DE   Interferon-receptor binding peptide #5.
XX
KW   IFN; cell surface receptor; pharmaceutical carrier molecule;
KW   drug delivery; neoplastic tissue; infection;
KW   Type 1 human interferon receptor complex.
XX
OS   Synthetic.
XX
PN   WO9401457-A1.
XX
PD   20-JAN-1994.
XX
PF   06-JUL-1993;   93WO-CA000279.
XX
PR   07-JUL-1992;   92US-00909739.
PR   20-NOV-1992;   92US-00980525.
XX
PA   (FISH/) FISH E N.
XX
PI   Fish EN;
XX
DR   WPI; 1994-034987/04.
XX
PT   New interferon receptor-binding peptide(s) - useful for delivering a
PT   pharmaceutically active drug to cells, e.g. neoplastic, infected or
PT   inflamed tissue cells.
XX
PS   Claim 5; Page 35; 51pp; English.
XX
CC   The critical clusters of amino acids in the different IFN-alphas and IFN-
CC   beta that interact with the Type 1 IFN receptor complex were defined.
CC   These critical peptide domains were used to design synthetic peptides
CC   AAR47558-R47564 that are useful as carriers for pharmaceutical
CC   compositions. (Updated on 25-MAR-2003 to correct PN field.)
XX
SQ   Sequence 18 AA;

  Query Match             100.0%;  Score 42;  DB 2;  Length 18;
  Best Local Similarity   100.0%;  Pred. No. 0.51;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db          9 LTEKKYSP 16


RESULT 6
ABG68835
ID   ABG68835 standard; peptide; 18 AA.
XX
AC   ABG68835;
XX
DT   07-OCT-2002  (first entry)
XX
DE   Interferon receptor binding peptide #5.
XX
KW   Cytostatic; virucide; hepatotropic; antiinflammatory; neuroprotective;
KW   immunosuppressive; antiarthritic; cytokine receptor; interferon; IFN;
KW   cancer; haematological malignancy; viral infection; hepatitis; human;
KW   multiple sclerosis; autoimmune disease; arthritis.
XX
OS   Homo sapiens.
XX
PN   WO200244197-A2.
XX
PD   06-JUN-2002.
XX
PF   30-NOV-2001; 2001WO-CA001701.
```

```
XX
PR   01-DEC-2000; 2000US-00727388.
XX
PA   (FISH/) FISH E N.
XX
PI   Fish EN;
XX
DR   WPI; 2002-547689/58.
XX
PT   Cytokine receptor binding peptide construct, in particular interferon
PT   receptor binding peptide construct for use as an interferon mimetic,
PT   comprises a cytokine receptor binding domain incorporated in a molecular
PT   scaffold.
XX
PS   Claim 16; Page 62; 105pp; English.
XX
CC   This invention relates to a novel cytokine receptor binding peptide
CC   construct comprising a cytokine receptor binding domain incorporated in a
CC   suitable molecular scaffold so that the scaffold maintains the binding
CC   domain in a configuration suitable for binding to the cytokine receptor.
CC   The peptides of the invention may have cytostatic, virucide,
CC   hepatotropic, antiinflammatory, neuroprotective, immunosuppressive and
CC   antiarthritic activities. A new interferon receptor binding peptide
CC   construct is useful in the manufacture of a medicament as an interferon
CC   (IFN) mimetic. A peptide that mimics the effect of IFN is useful in
CC   medical therapies for cancer, haematological malignancies, viral
CC   infections (hepatitis B or C), multiple sclerosis and autoimmune diseases
CC   such as arthritis, to detect modulators of IFN action, in screening
CC   assays to compare the activity and/or interaction with another molecule
CC   or potential IFN modulator and also in the diagnosis of IFN activity
CC   related disorders. A nucleic acid encoding the peptide of the invention
CC   or is useful for the treatment and therapy of the mentioned medical
CC   conditions. The peptide of the invention has less side effect than those
CC   of native cytokines. The present sequence represents an interferon
CC   receptor binding peptide of the invention
XX
SQ   Sequence 18 AA;

  Query Match             100.0%;  Score 42;  DB 5;  Length 18;
  Best Local Similarity   100.0%;  Pred. No. 0.51;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db          9 LTEKKYSP 16


RESULT 7
AAM50696
ID   AAM50696 standard; protein; 46 AA.
XX
AC   AAM50696;
XX
DT   15-APR-2002  (first entry)
XX
DE   Human mature interferon-alpha2b (aa120-165) K131T mutant.
XX
KW   Interferon-alpha2b; IFN-alpha; human; virucide; antiviral; hepatic;
KW   hepatitis; infection; liver; gene therapy; mutant; mutein.
XX
OS   Homo sapiens.
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 12
FT                   /note= "Lys in wild-type sequence"
XX
PN   US6331525-B1.
XX
PD   18-DEC-2001.
XX
PF   23-AUG-1999;   99US-00379434.
XX
PR   14-MAR-1996;   96US-00616023.
PR   17-MAR-1997;   97US-00819238.
XX
PA   (IMMU-) IMMUNE RESPONSE CORP.
XX
PI   Chiou HC,  Carlo DJ;
XX
DR   WPI; 2002-105276/14.
XX
PT   Targeted delivery of nucleic acids encoding interferons to the liver for
PT   the treatment of hepatitis infections.
XX
PS   Disclosure; Col; 28pp; English.
XX
CC   The present sequence corresponds to amino acids 120-165 of human mature
CC   interferon-alpha2b (IFN-alpha2b, see AAM50693), but with the residue
CC   corresponding to Lys-131 of the wild-type sequence replaced by Thr, which
CC   is the residue found in the corresponding position of IFN-alpha1. The
CC   mutation was introduced into IFN-alpha2b DNA by site-directed
CC   mutagenesis. The virucide activity of the full-length mutant protein
CC   expressed in mouse cells (taking the activity of the wild-type protein as
CC   1) was 0.1. The invention provides a method for the targeted delivery of
CC   nucleic acids encoding interferons, especially human IFN-alpha2b, to the
CC   liver for the treatment of hepatitis infections. A hybrid IFN-alpha2b
CC   protein (see AAM50705) has been produced that shows 400 times the
CC   activity of the wild-type protein. Note: The present sequence is not
CC   shown in the specification but is derived from the human IFN-alpha2b wild
CC   -type sequence given in figure 11A (see AAM50693) and the information for
CC   amino acid substitutions given in Fig 11B
XX
SQ   Sequence 46 AA;

  Query Match             100.0%;  Score 42;  DB 5;  Length 46;
  Best Local Similarity   100.0%;  Pred. No. 1.4;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db         11 LTEKKYSP 18


RESULT 8
AAM50700
ID   AAM50700 standard; protein; 46 AA.
XX
AC   AAM50700;
XX
DT   15-APR-2002  (first entry)
XX
DE   Human mature interferon-alpha2b (aa120-165) Q124R,K131T mutant.
XX
KW   Interferon-alpha2b; IFN-alpha; human; virucide; antiviral; hepatic;
KW   hepatitis; infection; liver; gene therapy; mutant; mutein.
XX
OS   Homo sapiens.
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 5
FT                   /note= "Gln in wild-type sequence"
FT   Misc-difference 12
FT                   /note= "Lys in wild-type sequence"
XX
PN   US6331525-B1.
XX
PD   18-DEC-2001.
XX
PF   23-AUG-1999;   99US-00379434.
XX
PR   14-MAR-1996;   96US-00616023.
PR   17-MAR-1997;   97US-00819238.
XX
PA   (IMMU-) IMMUNE RESPONSE CORP.
```

```
XX
PI   Chiou HC,  Carlo DJ;
XX
DR   WPI; 2002-105276/14.
XX
PT   Targeted delivery of nucleic acids encoding interferons to the liver for
PT   the treatment of hepatitis infections.
XX
PS   Disclosure; Col; 28pp; English.
XX
CC   The present sequence corresponds to amino acids 120-165 of human mature
CC   interferon-alpha2b (IFN-alpha2b, see AAM50693), but with the residue
CC   corresponding to Gln-124 of the wild-type sequence replaced by Arg, and
CC   the residue corresponding to wild-type Lys-131 replaced by Thr. These are
CC   the residues found in the corresponding positions of IFN-alpha1. The
CC   mutations were introduced into IFN-alpha2b DNA by site-directed
CC   mutagenesis. The virucide activity of the full-length mutant protein
CC   expressed in mouse cells (taking the activity of the wild-type protein as
CC   1) was 23. The invention provides a method for the targeted delivery of
CC   nucleic acids encoding interferons, especially human IFN-alpha2b, to the
CC   liver for the treatment of hepatitis infections. A hybrid IFN-alpha2b
CC   protein (see AAM50705) has been produced that shows 400 times the
CC   activity of the wild-type protein. Note: The present sequence is not
CC   shown in the specification but is derived from the human IFN-alpha2b wild
CC   -type sequence given in figure 11A (see AAM50693) and the information for
CC   amino acid substitutions given in Fig 11B
XX
SQ   Sequence 46 AA;

  Query Match             100.0%;  Score 42;  DB 5;  Length 46;
  Best Local Similarity   100.0%;  Pred. No. 1.4;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db         11 LTEKKYSP 18


RESULT 9
AAM50701
ID   AAM50701 standard; protein; 46 AA.
XX
AC   AAM50701;
XX
DT   15-APR-2002  (first entry)
XX
DE   Human mature interferon-alpha2b R120K,Q124R,K131T mutant.
XX
KW   Interferon-alpha2b; IFN-alpha; human; virucide; antiviral; hepatic;
KW   hepatitis; infection; liver; gene therapy; mutant; mutein.
XX
OS   Homo sapiens.
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 1
FT                   /note= "Arg in wild-type sequence"
FT   Misc-difference 5
FT                   /note= "Gln in wild-type sequence"
FT   Misc-difference 12
FT                   /note= "Lys in wild-type sequence"
XX
PN   US6331525-B1.
XX
PD   18-DEC-2001.
XX
PF   23-AUG-1999;   99US-00379434.
XX
PR   14-MAR-1996;   96US-00616023.
PR   17-MAR-1997;   97US-00819238.
XX
PA   (IMMU-) IMMUNE RESPONSE CORP.
XX
PI   Chiou HC,  Carlo DJ;
XX
DR   WPI; 2002-105276/14.
XX
PT   Targeted delivery of nucleic acids encoding interferons to the liver for
PT   the treatment of hepatitis infections.
XX
PS   Disclosure; Col; 28pp; English.
XX
CC   The present sequence corresponds to amino acids 120-165 of human mature
CC   interferon-alpha2b (IFN-alpha2b, see AAM50693), but with the residue
CC   corresponding to Arg-120 of the wild-type sequence replaced by Lys, wild-
CC   type residue Gln-124 replaced by Arg, and wild-type residue Lys-131
CC   replaced by Thr. These are the residues found in the corresponding
CC   positions of IFN-alpha1. The mutations were introduced into IFN-alpha2b
CC   DNA by site-directed mutagenesis. The virucide activity of the full-
CC   length mutant protein expressed in mouse cells (taking the activity of
CC   the wild-type protein as 1) was 170. The invention provides a method for
CC   the targeted delivery of nucleic acids encoding interferons, especially
CC   human IFN-alpha2b, to the liver for the treatment of hepatitis
CC   infections. A hybrid IFN-alpha2b protein (see AAM50705) has been produced
CC   that shows 400 times the activity of the wild-type protein. Note: The
CC   present sequence is not shown in the specification but is derived from
CC   the human IFN-alpha2b wild-type sequence given in figure 11A (see
CC   AAM50693) and the information for amino acid substitutions given in Fig
CC   11B
XX
SQ   Sequence 46 AA;

  Query Match             100.0%;  Score 42;  DB 5;  Length 46;
  Best Local Similarity   100.0%;  Pred. No. 1.4;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db         11 LTEKKYSP 18


RESULT 10
AAM50704
ID   AAM50704 standard; protein; 46 AA.
XX
AC   AAM50704;
XX
DT   15-APR-2002  (first entry)
XX
DE   Human mature interferon-alpha2b (aa120-165) Q124K,K131T mutant.
XX
KW   Interferon-alpha2b; IFN-alpha; human; virucide; antiviral; hepatic;
KW   hepatitis; infection; liver; gene therapy; mutant; mutein.
XX
OS   Homo sapiens.
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 5
FT                   /note= "Gln in wild-type sequence"
FT   Misc-difference 12
FT                   /note= "Lys in wild-type sequence"
XX
PN   US6331525-B1.
XX
PD   18-DEC-2001.
XX
PF   23-AUG-1999;   99US-00379434.
XX
PR   14-MAR-1996;   96US-00616023.
PR   17-MAR-1997;   97US-00819238.
XX
PA   (IMMU-) IMMUNE RESPONSE CORP.
XX
PI   Chiou HC,  Carlo DJ;
XX
```

DR WPI; 2002-105276/14.
XX
PT Targeted delivery of nucleic acids encoding interferons to the liver for
PT the treatment of hepatitis infections.
XX
PS Disclosure; Col; 28pp; English.
XX
CC The present sequence corresponds to amino acids 120-165 of human mature
CC interferon-alpha2b (IFN-alpha2b, see AAM50693), but with the residue
CC corresponding to Gln-124 of the wild-type sequence replaced by His, and
CC wild-type residue Lys-131 replaced by Thr. The mutations were introduced
CC into IFN-alpha2b DNA by site-directed mutagenesis. The virucide activity
CC of the full-length mutant protein expressed in mouse cells (taking the
CC activity of the wild-type protein as 1) was 4. The invention provides a
CC method for the targeted delivery of nucleic acids encoding interferons,
CC especially human IFN-alpha2b, to the liver for the treatment of hepatitis
CC infections. A hybrid IFN-alpha2b protein (see AAM50705) has been produced
CC that shows 400 times the activity of the wild-type protein. Note: The
CC present sequence is not shown in the specification but is derived from
CC the human IFN-alpha2b wild-type sequence given in figure 11A (see
CC AAM50693) and the information for amino acid substitutions given in Fig
CC 11B
XX
SQ Sequence 46 AA;

Query Match 100.0%; Score 42; DB 5; Length 46;
Best Local Similarity 100.0%; Pred. No. 1.4;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 LTEKKYSP 8
||||||||
Db 11 LTEKKYSP 18

RESULT 11
AAY55987
ID AAY55987 standard; protein; 90 AA.
XX
AC AAY55987;
XX
DT 15-MAR-2000 (first entry)
XX
DE Partial human interferon-alpha5 protein.
XX
KW Antiviral; anticancer; antiproliferative; human; interferon-alpha5;
KW hepatic disease; hepatitis C; viral cirrhosis; hepatocellular carcinoma;
KW liver; gene expression.
XX
OS Homo sapiens.
XX
PN WO9958143-A1.
XX
PD 18-NOV-1999.
XX
PF 13-MAY-1999; 99WO-ES000134.
XX
PR 13-MAY-1998; 98ES-00001003.
XX
PA (CIEN-) INST CIENTIFICO & TECNOLOGICO NAVARRA.
XX
PI Prieto Valtuena J, Civeira Murillo MP, Larrea Leoz E;
XX
DR WPI; 2000-038959/03.
DR N-PSDB; AAZ47031.
XX
PT Treating liver diseases with interferon-alpha5 or nucleic acid encoding
PT it, particularly chronic hepatitis C.
XX
PS Disclosure; Page 30; 36pp; Spanish.
XX
CC This sequence corresponds to a fragment of the human interferon-alpha5
CC protein (GenBank Accession No: X02956). The invention relates to a method
CC of using interferon-alpha5 or its coding sequence to prepare compositions
CC for treatment of hepatic diseases, e.g. (i) chronic hepatitis C; (ii)
CC cirrhosis of viral origin and (iii) hepatocellular carcinoma. The method
CC restores the level of interferon-alpha5, which is reduced in diseased
CC liver cells, to normal levels
XX
SQ Sequence 90 AA;

Query Match 100.0%; Score 42; DB 3; Length 90;
Best Local Similarity 100.0%; Pred. No. 2.7;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 LTEKKYSP 8
||||||||
Db 74 LTEKKYSP 81

RESULT 12
ABU52320
ID ABU52320 standard; protein; 132 AA.
XX
AC ABU52320;
XX
DT 03-MAR-2003 (first entry)
XX
DE Human GPCR related protein NOV4b.
XX
KW Human; NOVX; G-protein coupled receptor; GPCR; cancer; cytostatic.
XX
OS Homo sapiens.
XX
PN WO200279398-A2.
XX
PD 10-OCT-2002.
XX
PF 08-MAR-2002; 2002WO-US007355.
XX
PR 08-MAR-2001; 2001US-0274194P.
PR 08-MAR-2001; 2001US-0274281P.
PR 08-MAR-2001; 2001US-0274322P.
PR 09-MAR-2001; 2001US-0274849P.
PR 13-MAR-2001; 2001US-0275578P.
PR 13-MAR-2001; 2001US-0275579P.
PR 13-MAR-2001; 2001US-0275601P.
PR 14-MAR-2001; 2001US-0276000P.
PR 16-MAR-2001; 2001US-0276776P.
PR 19-MAR-2001; 2001US-0276994P.
PR 20-MAR-2001; 2001US-0277239P.
PR 20-MAR-2001; 2001US-0277327P.
PR 20-MAR-2001; 2001US-0277338P.
PR 21-MAR-2001; 2001US-0277791P.
PR 22-MAR-2001; 2001US-0277833P.
PR 23-MAR-2001; 2001US-0278152P.
PR 26-MAR-2001; 2001US-0278894P.
PR 27-MAR-2001; 2001US-0278999P.
PR 27-MAR-2001; 2001US-0279036P.
PR 30-MAR-2001; 2001US-0280233P.
PR 02-APR-2001; 2001US-0280802P.
PR 02-MAY-2001; 2001US-0288052P.
PR 02-MAY-2001; 2001US-0288066P.
PR 02-MAY-2001; 2001US-0288228P.
PR 17-MAY-2001; 2001US-0291766P.
PR 07-JUN-2001; 2001US-0296693P.
PR 08-JUN-2001; 2001US-0296856P.
PR 05-JUL-2001; 2001US-0303230P.
PR 05-JUL-2001; 2001US-0303237P.
PR 08-AUG-2001; 2001US-0310913P.
PR 13-AUG-2001; 2001US-0311978P.
PR 14-AUG-2001; 2001US-0312191P.
PR 16-AUG-2001; 2001US-0312916P.
PR 17-AUG-2001; 2001US-0313182P.
PR 20-AUG-2001; 2001US-0313626P.
PR 21-AUG-2001; 2001US-0314018P.
PR 27-AUG-2001; 2001US-0315227P.

PR 10-SEP-2001; 2001US-0318403P.
PR 10-SEP-2001; 2001US-0318510P.
PR 14-SEP-2001; 2001US-0322296P.
PR 14-SEP-2001; 2001US-0322360P.
PR 27-SEP-2001; 2001US-0325378P.
PR 09-NOV-2001; 2001US-0332486P.
PR 09-NOV-2001; 2001US-0345399P.
PR 07-MAR-2002; 2002US-00094886.
XX
PA (CURA-) CURAGEN CORP.
XX
PI Kekuda R, Tchernev VT, Liu X, Spytek KA, Patturajan M;
PI Burgess CE, Vernet CAM, Li L, Gorman L, Malyankar UM, Boldog FL;
PI Guo X, Shenoy SG, Padigaru M, Taupier RJ, Miller CE, Casman SJ;
PI Pena CEA, Gangolli EA, Gusev V, Smithson G, Zerhusen BD, Gerlach V;
PI Pochart PF, Fernandes ER, Shimkets RA, Rastelli L, Spaderna SK;
PI Larochelle WJ, Zhong M, Khramtsov NV, Voss EZ, Herrmann JL;
XX
DR WPI; 2003-058423/05.
DP N-PSDB; ABX70411.
XX
PT NOVX polypeptides and polynucleotides, useful for treating a syndrome
PT related to a human disease associated with the NOVX polypeptide e.g.,
PT cancer.
XX
PS Claim 1; Page 94; 413pp; English.
XX
CC The present invention relates to the isolation of novel human
CC polypeptides referred to as NOVX (NOV1-NOV44), variants of these
CC proteins, and the polynucleotide sequences encoding them. The NOVX
CC proteins of the invention are G-protein coupled receptor (GPCR) related
CC proteins. The sequences of the invention are useful in the manufacture of
CC a medicament for treating a syndrome related to a human disease
CC associated with the polypeptides e.g. cancer. ABU52311-ABU52408 represent
CC the human NOVX proteins of the invention
XX
SQ Sequence 132 AA;

Query Match 100.0%; Score 42; DB 6; Length 132;
Best Local Similarity 100.0%; Pred. No. 4.1;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 LTEKKYSP 8
||||||||
Db 95 LTEKKYSP 102

RESULT 13
ADL23975
ID ADL23975 standard; protein; 132 AA.
XX
AC ADL23975;
XX
DT 20-MAY-2004 (first entry)
XX
DE Human NOVX polypeptide #10.
XX
KW Human; NOVX; G protein-coupled receptor; GPCR; cardiomyopathy;
KW atherosclerosis; hypertension; congenital heart defect; aortic stenosis;
KW atrial septal defect; ASD; atrioventricular canal defect;
KW ductus arteriosus; pulmonary stenosis; subaortic stenosis;
KW ventricular septal defect; VSD; tuberous sclerosis; scleroderma; obesity;
KW adrenoleukodystrophy; congenital adrenal hyperplasia; prostate cancer;
KW neoplasm; adenocarcinoma; lymphoma; uterine cancer; haemophilia;
KW hypercoagulability; idiopathic thrombocytopenia purpura;
KW immunodeficiency; graft-versus-host disease; AIDS; bronchial asthma;
KW Crohn's disease; multiple sclerosis;
KW Albright's hereditary osteodystrophy; diabetes; infectious diseases;
KW anorexia; neurodegenerative disorder; Alzheimer's disease;
KW Parkinson's disease; haematopoietic disorder; metabolic disorder;
KW receptor.
XX
OS Homo sapiens.
XX
PN US2004002120-A1.
XX
PD 01-JAN-2004.
XX
PF 07-MAR-2002; 2002US-00094886.
XX
PR 08-MAR-2001; 2001US-0274194P.
PR 08-MAR-2001; 2001US-0274281P.
PR 08-MAR-2001; 2001US-0274322P.
PR 09-MAR-2001; 2001US-0274849P.
PR 12-MAR-2001; 2001US-0275235P.
PR 13-MAR-2001; 2001US-0275578P.
PR 13-MAR-2001; 2001US-0275579P.
PR 13-MAR-2001; 2001US-0275601P.
PR 14-MAR-2001; 2001US-0276000P.
PR 16-MAR-2001; 2001US-0276776P.
PR 19-MAR-2001; 2001US-0276994P.
PR 20-MAR-2001; 2001US-0277239P.
PR 20-MAR-2001; 2001US-0277327P.
PR 20-MAR-2001; 2001US-0277338P.
PR 21-MAR-2001; 2001US-0277791P.
PR 22-MAR-2001; 2001US-0277833P.
PR 23-MAR-2001; 2001US-0278152P.
PR 26-MAR-2001; 2001US-0278894P.
PR 27-MAR-2001; 2001US-0278999P.
PR 27-MAR-2001; 2001US-0279036P.
PR 30-MAR-2001; 2001US-0280233P.
PR 02-APR-2001; 2001US-0280802P.
PR 02-MAY-2001; 2001US-0288052P.
PR 02-MAY-2001; 2001US-0288066P.
PR 02-MAY-2001; 2001US-0288228P.
PR 17-MAY-2001; 2001US-0291766P.
PR 07-JUN-2001; 2001US-0296693P.
PR 08-JUN-2001; 2001US-0296856P.
PR 05-JUL-2001; 2001US-0303230P.
PR 05-JUL-2001; 2001US-0303237P.
PR 08-AUG-2001; 2001US-0310913P.
PR 13-AUG-2001; 2001US-0311978P.
PR 14-AUG-2001; 2001US-0312191P.
PR 16-AUG-2001; 2001US-0312916P.
PR 17-AUG-2001; 2001US-0313182P.
PR 20-AUG-2001; 2001US-0313626P.
PR 21-AUG-2001; 2001US-0314018P.
PR 27-AUG-2001; 2001US-0315227P.
PR 10-SEP-2001; 2001US-0318403P.
PR 10-SEP-2001; 2001US-0318510P.
PR 14-SEP-2001; 2001US-0322296P.
PR 14-SEP-2001; 2001US-0322360P.
PR 27-SEP-2001; 2001US-0325378P.
PR 09-NOV-2001; 2001US-0332486P.
PR 09-NOV-2001; 2001US-0345399P.
XX
PA (KEKU/) KEKUDA R.
PA (TCHE/) TCHERNEV V T.
PA (LIUX/) LIU X.
PA (SPYT/) SPYTEK K A.
PA (PATT/) PATTURAJAN M.
PA (BURG/) BURGESS C E.
PA (VERN/) VERNET C A M.
PA (LILL/) LI L.
PA (GORM/) GORMAN L.
PA (MALY/) MALYANKAR U M.
PA (BOLD/) BOLDOG F L.
PA (GUOX/) GUO X.
PA (SHEN/) SHENOY S G.
PA (PADI/) PADIGARU M.
PA (TAUP/) TAUPIER R J.
PA (MILL/) MILLER C E.
PA (CASM/) CASMAN S J.
PA (PENA/) PENA C E A.
PA (GANG/) GANGOLLI E A.
PA (GUSE/) GUSEV V Y.

PA (SMIT/) SMITHSON G.
PA (ZERH/) ZERHUSEN B D.
PA (GERL/) GERLACH V.
PA (POCH/) POCHART P F.
PA (FERN/) FERNANDES E R.
PA (SHIM/) SHIMKETS R A.
PA (RAST/) RASTELLI L.
PA (SPAD/) SPADERNA S K.
PA (LARO/) LAROCHELLE W J.
PA (ZHON/) ZHONG M.
PA (KHRA/) KHRAMTSOV N V.
PA (VOSS/) VOSS E Z.
PA (HERR/) HERRMANN J L.
XX
PI Kekuda R, Tchernev VT, Liu X, Spytek KA, Patturajan M;
PI Burgess CE, Vernet CAM, Li L, Gorman L, Malyankar UM, Boldog FL;
PI Guo X, Shenoy SG, Padigaru M, Taupier RJ, Miller CE, Casman SJ;
PI Pena CEA, Gangolli EA, Gusev VY, Smithson G, Zerhusen BD, Gerlach V;
PI Pochart PF, Fernandes ER, Shimkets RA, Rastelli L, Spaderna SK;
PI Larochelle WJ, Zhong M, Khramtsov NV, Voss EZ, Herrmann JL;
XX
DR WPI; 2004-212692/20.
DR N-PSDB; ADL23974.
XX
PT Novel isolated G protein-coupled receptor polypeptides, referred as NOVX,
PT useful for treating scleroderma, obesity, congenital adrenal hyperplasia,
PT prostate cancer, hemophilia, AIDS, bronchial asthma, Crohn's disease.
XX
PS Claim 1; SEQ ID NO 20; 287pp; English.
XX
CC The invention relates to human G protein-coupled receptor-related (GPCR-
CC related) polypeptides (designated NOVX) and the polynucleotides encoding
CC them. The polypeptides and polynucleotides are useful as therapeutics in
CC the manufacture of medicaments for treating syndromes associated with
CC human diseases. The sequences are useful for treating a disorder
CC associated with aberrant NOVX expression or activity such as
CC cardiomyopathy, atherosclerosis, hypertension, congenital heart defects,
CC aortic stenosis, atrial septal defect (ASD), atrioventricular canal
CC defect, ductus arteriosus, pulmonary stenosis, subaortic stenosis,
CC ventricular septal defect (VSD), tuberous sclerosis, scleroderma,
CC obesity, adrenoleukodystrophy, congenital adrenal hyperplasia, prostate
CC cancer, neoplasm, adenocarcinoma, lymphoma, uterine cancer, haemophilia,
CC hypercoagulability, idiopathic thrombocytopenia purpura,
CC immunodeficiencies, graft-versus-host disease, AIDS, bronchial asthma,
CC Crohn's disease, multiple sclerosis, Albright's hereditary
CC osteodystrophy, diabetes, infectious diseases, anorexia,
CC neurodegenerative disorders, Alzheimer's disease, Parkinson's disease,
CC immune disorders, haematopoietic disorders and metabolic disorders. This
CC sequence represents a human NOVX polypeptide of the invention.
XX
SQ Sequence 132 AA;

Query Match 100.0%; Score 42; DB 8; Length 132;
Best Local Similarity 100.0%; Pred. No. 4.1;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 LTEKKYSP 8
||||||||
Db 95 LTEKKYSP 102

RESULT 14
AAP20109
ID AAP20109 standard; protein; 133 AA.
XX
AC AAP20109;
XX
DT 25-MAR-2003 (revised)
DT 10-AUG-1992 (first entry)
XX
DE Sequence encoded by leukocyte interferon LeIF G cDNA.
XX
KW Viral infection; therapy; malignancy.
XX
OS Homo sapiens.
XX
PN GB2079291-A.
XX
PD 20-JAN-1982.
XX
PF 01-JUL-1981; 81GB-00020279.
XX
PR 01-JUL-1980; 80US-00164986.
PR 08-SEP-1980; 80US-00184909.
PR 10-NOV-1980; 80US-00205578.
PR 21-APR-1981; 81US-00256204.
XX
PA (HOFF ) HOFFMANN-LA ROCHE AG.
PA (GETH ) GENENTECH INC.
PA (GETH ) GENENTECH INC.
XX
PI Goeddel DVN, Pestka S;
XX
DR WPI; 1982-04460E/03.
DR N-PSDB; AAN20096.
XX
PT Mature human leukocyte interferon polypeptide(s) - prepd. from microbes
PT transformed with appropriate DNA sequences.
XX
PS Example; Fig 4; 20pp; English.
XX
CC The inventors claim a polypeptide comprising the AA sequence of a mature
CC human LeIF and a DNA sequence encoding it. LeIF A-D, F, H-J and encoding
CC DNA are specifically claimed. They are natural allelic variations. LeIF
CC is isolated from the leukocytes of humans with chronic myelogenous
CC leukaemia, induced to produce interferon with Sendai or Newcastle disease
CC virus; esp. the cell line KG-1. (Updated on 25-MAR-2003 to correct PF
CC field.) (Updated on 25-MAR-2003 to correct PA field.)
XX
SQ Sequence 133 AA;

Query Match 100.0%; Score 42; DB 1; Length 133;
Best Local Similarity 100.0%; Pred. No. 4.1;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 LTEKKYSP 8
||||||||
Db 98 LTEKKYSP 105

RESULT 15
AAR11799
ID AAR11799 standard; protein; 150 AA.
XX
AC AAR11799;
XX
DT 25-MAR-2003 (revised)
DT 03-JUN-1991 (first entry)
XX
DE Interferon alpha 88 as CR2 ligand.
XX
KW Cellular receptor 2; CR2; binding site; BS; auto-immune disease;
KW Epstein-Barr Virus; EBV; B lymphocyte; ligand; interferon alpha 88.
XX
OS Synthetic.
XX
FH Key Location/Qualifiers
FT Binding-site 72. .86
FT /note= "fragment pref. included"
FT Binding-site 75. .82
FT /note= "fragment most pref. included"
XX
PN WO9103251-A.
XX
PD 21-MAR-1991.
XX

PF 08-SEP-1989; 89US-00404679.
XX
PR 08-SEP-1989; 89US-00404679.
PR 20-APR-1990; 90US-00512118.
XX
PA (CALB-) CALIF INST BIOLOGIC.
XX
PI Lenhardt W;
XX
DR WPI; 1991-101864/14.
XX
PT DNA segment encoding CR-2 ligand and CR2 binding site - used to treat
PT auto-immune disease, B-cell lymphoma and inhibit Epstein-Barr virus
PT infection.
XX
PS Disclosure; Fig 2; 129pp; English.
XX
CC The ligand pref. includes the fragment indicated in the features. The
CC ligand pref. contains only a single BS and has an amino acid sequence
CC <100 (pref. <20) residues in length. The ligand may also comprise a
CC plurality of fragment 75. .82. A therapeutic compsn. contg. the
CC polypeptide is used to stimulate or inhibit B lymphocyte proliferation in
CC patients with B cell lymphoma. B lymphocytes and myeloma's can be
CC stimulated in patients with immunodeficiencies and immunoglobulin
CC secretion by hybridoma cultures can be boosted. The compsn. can be
CC administered to inhibit infection in vitro or in vivo by Epstein-Barr
CC Virus. See also AAQ11140-42 and AAR11355 for IFN alpha. (Updated on 25-
CC MAR-2003 to correct PI field.)
XX
SQ Sequence 150 AA;

Query Match 100.0%; Score 42; DB 2; Length 150;
Best Local Similarity 100.0%; Pred. No. 4.7;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 LTEKKYSP 8
              ||||||||
Db        115 LTEKKYSP 122
```

Search completed: May 19, 2005, 12:52:07
Job time : 164 secs

GenCore version 5.1.6


OM protein - protein search, using sw model

Run on: May 19, 2005, 12:41:57 ; Search time 42 Seconds
(without alignments)
14.219 Million cell updates/sec

Title: US-09-424-080B-1
Perfect score: 42
Sequence: 1 LTEKKYSP 8

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 513545 seqs, 74649064 residues

Total number of hits satisfying chosen parameters: 513545

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued_Patents_AA:*
1: /cgn2_6/ptodata/1/iaa/5A_COMB.pep:*
2: /cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
3: /cgn2_6/ptodata/1/iaa/6A_COMB.pep:*
4: /cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
5: /cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*
6: /cgn2_6/ptodata/1/iaa/backfiles1.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | % Query Match | Length | DB | ID | Description |
|---|---|---|---|---|---|---|
| 1 | 42 | 100.0 | 8 | 2 | US-08-669-284B-30 | Sequence 30, Appl |
| 2 | 42 | 100.0 | 11 | 1 | US-08-362-453-4 | Sequence 4, Appli |
| 3 | 42 | 100.0 | 18 | 1 | US-08-362-453-5 | Sequence 5, Appli |
| 4 | 42 | 100.0 | 133 | 4 | US-07-145-002B-14 | Sequence 14, Appl |
| 5 | 42 | 100.0 | 133 | 4 | US-07-145-002B-23 | Sequence 23, Appl |
| 6 | 42 | 100.0 | 133 | 4 | US-06-256-204C-14 | Sequence 14, Appl |
| 7 | 42 | 100.0 | 133 | 4 | US-06-256-204C-23 | Sequence 23, Appl |
| 8 | 42 | 100.0 | 150 | 1 | US-08-362-453-10 | Sequence 10, Appl |
| 9 | 42 | 100.0 | 150 | 1 | US-08-362-453-11 | Sequence 11, Appl |
| 10 | 42 | 100.0 | 150 | 1 | US-08-362-453-12 | Sequence 12, Appl |
| 11 | 42 | 100.0 | 162 | 1 | US-08-362-453-15 | Sequence 15, Appl |
| 12 | 42 | 100.0 | 165 | 1 | US-08-362-453-13 | Sequence 13, Appl |
| 13 | 42 | 100.0 | 165 | 1 | US-08-362-453-14 | Sequence 14, Appl |
| 14 | 42 | 100.0 | 165 | 4 | US-09-744-754C-13 | Sequence 13, Appl |
| 15 | 42 | 100.0 | 166 | 1 | US-08-362-453-8 | Sequence 8, Appli |
| 16 | 42 | 100.0 | 166 | 1 | US-08-362-453-9 | Sequence 9, Appli |
| 17 | 42 | 100.0 | 166 | 2 | US-08-489-066A-16 | Sequence 16, Appl |
| 18 | 42 | 100.0 | 166 | 3 | US-08-489-072A-16 | Sequence 16, Appl |
| 19 | 42 | 100.0 | 166 | 3 | US-08-819-238A-2 | Sequence 2, Appli |
| 20 | 42 | 100.0 | 166 | 3 | US-08-954-395A-9 | Sequence 9, Appli |
| 21 | 42 | 100.0 | 166 | 3 | US-08-954-395A-10 | Sequence 10, Appl |
| 22 | 42 | 100.0 | 166 | 3 | US-08-954-395A-11 | Sequence 11, Appl |
| 23 | 42 | 100.0 | 166 | 3 | US-08-954-395A-12 | Sequence 12, Appl |
| 24 | 42 | 100.0 | 166 | 3 | US-08-954-395A-13 | Sequence 13, Appl |
| 25 | 42 | 100.0 | 166 | 3 | US-08-954-395A-14 | Sequence 14, Appl |
| 26 | 42 | 100.0 | 166 | 3 | US-08-954-395A-15 | Sequence 15, Appl |
| 27 | 42 | 100.0 | 166 | 3 | US-08-954-395A-16 | Sequence 16, Appl |
| 28 | 42 | 100.0 | 166 | 3 | US-08-954-395A-17 | Sequence 17, Appl |
| 29 | 42 | 100.0 | 166 | 3 | US-08-489-071A-16 | Sequence 16, Appl |
| 30 | 42 | 100.0 | 166 | 3 | US-09-339-913B-75 | Sequence 75, Appl |
| 31 | 42 | 100.0 | 166 | 3 | US-09-339-913B-76 | Sequence 76, Appl |
| 32 | 42 | 100.0 | 166 | 3 | US-09-339-913B-77 | Sequence 77, Appl |
| 33 | 42 | 100.0 | 166 | 3 | US-09-339-913B-79 | Sequence 79, Appl |
| 34 | 42 | 100.0 | 166 | 3 | US-09-339-913B-80 | Sequence 80, Appl |
| 35 | 42 | 100.0 | 166 | 3 | US-09-339-913B-83 | Sequence 83, Appl |
| 36 | 42 | 100.0 | 166 | 3 | US-09-339-913B-84 | Sequence 84, Appl |
| 37 | 42 | 100.0 | 166 | 3 | US-09-339-913B-85 | Sequence 85, Appl |
| 38 | 42 | 100.0 | 166 | 3 | US-09-339-904A-75 | Sequence 75, Appl |
| 39 | 42 | 100.0 | 166 | 3 | US-09-339-904A-76 | Sequence 76, Appl |
| 40 | 42 | 100.0 | 166 | 3 | US-09-339-904A-77 | Sequence 77, Appl |
| 41 | 42 | 100.0 | 166 | 3 | US-09-339-904A-79 | Sequence 79, Appl |
| 42 | 42 | 100.0 | 166 | 3 | US-09-339-904A-80 | Sequence 80, Appl |
| 43 | 42 | 100.0 | 166 | 3 | US-09-339-904A-83 | Sequence 83, Appl |
| 44 | 42 | 100.0 | 166 | 3 | US-09-339-904A-84 | Sequence 84, Appl |
| 45 | 42 | 100.0 | 166 | 3 | US-09-339-904A-85 | Sequence 85, Appl |

ALIGNMENTS

RESULT 1
US-08-669-284B-30
; Sequence 30, Application US/08669284B
; Patent No. 5939534
; GENERAL INFORMATION:
; APPLICANT: Inoue, Makoto
; APPLICANT: Kikuchi, Kaoru
; APPLICANT: Ishige, Yoko
; APPLICANT: Ito, Akira
; APPLICANT: Kimura, Toru
; APPLICANT: Nakayama, Chikao
; APPLICANT: No. 5939534uchi, Hiroshi
; TITLE OF INVENTION: NOVEL HUMAN CILIARY NEUROTROPHIC FACTORS
; NUMBER OF SEQUENCES: 35
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: SUGHRUE, MION, ZINN, MACPEAK & SEAS
; STREET: 2100 Pennsylvania Avenue, N.W.
; CITY: Washington
; STATE: D.C.
; COUNTRY: USA
; ZIP: 20037
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/669,284B
; FILING DATE: 28-JUN-1996
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: PCT/JP94/02269
; FILING DATE: 27-DEC-1994
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: JP 06-268281
; FILING DATE: 05-OCT-1994
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: JP 06-201504
; FILING DATE: 02-AUG-1994
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: JP 05-350934
; FILING DATE: 29-DEC-1993
; ATTORNEY/AGENT INFORMATION:
; NAME: Nakamura, Dean H.
; REGISTRATION NUMBER: 33,981
; REFERENCE/DOCKET NUMBER: Q-42041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (202)293-7060
; TELEFAX: (202)293-7860
; INFORMATION FOR SEQ ID NO: 30:
; SEQUENCE CHARACTERISTICS:

```
;      LENGTH:  8 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
US-08-669-284B-30

  Query Match             100.0%;  Score 42;  DB 2;  Length 8;
  Best Local Similarity   100.0%;  Pred. No. 4.1e+05;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db          1 LTEKKYSP 8


RESULT 2
US-08-362-453-4
; Sequence 4, Application US/08362453
; Patent No. 5684129
;  GENERAL INFORMATION:
;    APPLICANT:  FISH, Eleanor N.
;    TITLE OF INVENTION:  INTERFERON RECEPTOR BINDING PEPTIDES
;    NUMBER OF SEQUENCES:  17
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Nikaido, Marmelstein, Murray & Oram
;      STREET:  655 Fifteenth Street N.W. Suite 330
;      CITY:  Washington
;      STATE:  D.C.
;      COUNTRY:  U.S.A.
;      ZIP:  20005-5701
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/362,453
;      FILING DATE:  06-JAN-1995
;      CLASSIFICATION:  514
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 07/909,739
;      APPLICATION NUMBER:  FILING DATE: 07-JUL-1992
;      APPLICATION NUMBER:  US 07/980,525
;      APPLICATION NUMBER:  FILING DATE: 20-NOV-1992
;      APPLICATION NUMBER:  PCT/CA93/00279
;      APPLICATION NUMBER:  FILING DATE: 06-JUL-1993
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Kitts, Monica Chin
;      REGISTRATION NUMBER:  36,105
;      REFERENCE/DOCKET NUMBER:  P638-4017
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (202) 638-5000
;      TELEFAX:  (202) 638-4810
;  INFORMATION FOR SEQ ID NO:  4:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  11 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  unknown
;    MOLECULE TYPE:  peptide
US-08-362-453-4

  Query Match             100.0%;  Score 42;  DB 1;  Length 11;
  Best Local Similarity   100.0%;  Pred. No. 0.017;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db          2 LTEKKYSP 9


RESULT 3
US-08-362-453-5
; Sequence 5, Application US/08362453
; Patent No. 5684129
;  GENERAL INFORMATION:
;    APPLICANT:  FISH, Eleanor N.
;    TITLE OF INVENTION:  INTERFERON RECEPTOR BINDING PEPTIDES
;    NUMBER OF SEQUENCES:  17
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Nikaido, Marmelstein, Murray & Oram
;      STREET:  655 Fifteenth Street N.W. Suite 330
;      CITY:  Washington
;      STATE:  D.C.
;      COUNTRY:  U.S.A.
;      ZIP:  20005-5701
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/362,453
;      FILING DATE:  06-JAN-1995
;      CLASSIFICATION:  514
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 07/909,739
;      APPLICATION NUMBER:  FILING DATE: 07-JUL-1992
;      APPLICATION NUMBER:  US 07/980,525
;      APPLICATION NUMBER:  FILING DATE: 20-NOV-1992
;      APPLICATION NUMBER:  PCT/CA93/00279
;      APPLICATION NUMBER:  FILING DATE: 06-JUL-1993
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Kitts, Monica Chin
;      REGISTRATION NUMBER:  36,105
;      REFERENCE/DOCKET NUMBER:  P638-4017
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (202) 638-5000
;      TELEFAX:  (202) 638-4810
;  INFORMATION FOR SEQ ID NO:  5:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  18 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  unknown
;    MOLECULE TYPE:  peptide
US-08-362-453-5

  Query Match             100.0%;  Score 42;  DB 1;  Length 18;
  Best Local Similarity   100.0%;  Pred. No. 0.028;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db          9 LTEKKYSP 16


RESULT 4
US-07-145-002B-14
; Sequence 14, Application US/07145002B
; Patent No. 6482613
; GENERAL INFORMATION:
;  APPLICANT: Goeddel, David V.
;  APPLICANT:  Pestka, Sidney
;  TITLE OF INVENTION: MICROBIAL PRODUCTION OF MATURE HUMAN
;  TITLE OF INVENTION:  LEUKOCYTE INTERFERONS
;  FILE REFERENCE: 1803-0088-999
;  CURRENT APPLICATION NUMBER: US/07/145,002B
;  CURRENT FILING DATE:  1989-01-19
;  NUMBER OF SEQ ID NOS: 70
;  SOFTWARE: FastSEQ for Windows Version 3.0
; SEQ ID NO 14
;   LENGTH: 133
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-07-145-002B-14
```

```
  Query Match          100.0%;  Score 42;  DB 4;  Length 133;
  Best Local Similarity  100.0%;  Pred. No. 0.24;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db         98 LTEKKYSP 105


RESULT 5
US-07-145-002B-23
; Sequence 23, Application US/07145002B
; Patent No. 6482613
; GENERAL INFORMATION:
;  APPLICANT: Goeddel, David V.
;  APPLICANT:  Pestka, Sidney
;  TITLE OF INVENTION: MICROBIAL PRODUCTION OF MATURE HUMAN
;  TITLE OF INVENTION:  LEUKOCYTE INTERFERONS
;  FILE REFERENCE: 1803-0088-999
;  CURRENT APPLICATION NUMBER: US/07/145,002B
;  CURRENT FILING DATE:  1989-01-19
;  NUMBER OF SEQ ID NOS: 70
;  SOFTWARE: FastSEQ for Windows Version 3.0
; SEQ ID NO 23
;   LENGTH: 133
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-07-145-002B-23

  Query Match          100.0%;  Score 42;  DB 4;  Length 133;
  Best Local Similarity  100.0%;  Pred. No. 0.24;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db         98 LTEKKYSP 105


RESULT 6
US-06-256-204C-14
; Sequence 14, Application US/06256204C
; Patent No. 6610830
; GENERAL INFORMATION:
;  APPLICANT: Goeddel, David V.
;  APPLICANT:  Pestka, Sidney
;  TITLE OF INVENTION: MICROBIAL PRODUCTION OF MATURE HUMAN
;  TITLE OF INVENTION:  LEUKOCYTE INTERFERONS
;  FILE REFERENCE: 1803-0025-999
;  CURRENT APPLICATION NUMBER: US/06/256,204C
;  CURRENT FILING DATE:  1981-04-21
;  NUMBER OF SEQ ID NOS: 85
;  SOFTWARE: FastSEQ for Windows Version 3.0
; SEQ ID NO 14
;   LENGTH: 133
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-06-256-204C-14

  Query Match          100.0%;  Score 42;  DB 4;  Length 133;
  Best Local Similarity  100.0%;  Pred. No. 0.24;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db         98 LTEKKYSP 105


RESULT 7
US-06-256-204C-23
; Sequence 23, Application US/06256204C
; Patent No. 6610830
; GENERAL INFORMATION:
;  APPLICANT: Goeddel, David V.
;  APPLICANT:  Pestka, Sidney
;  TITLE OF INVENTION: MICROBIAL PRODUCTION OF MATURE HUMAN
;  TITLE OF INVENTION:  LEUKOCYTE INTERFERONS
;  FILE REFERENCE: 1803-0025-999
;  CURRENT APPLICATION NUMBER: US/06/256,204C
;  CURRENT FILING DATE:  1981-04-21
;  NUMBER OF SEQ ID NOS: 85
;  SOFTWARE: FastSEQ for Windows Version 3.0
; SEQ ID NO 23
;   LENGTH: 133
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-06-256-204C-23

  Query Match          100.0%;  Score 42;  DB 4;  Length 133;
  Best Local Similarity  100.0%;  Pred. No. 0.24;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db         98 LTEKKYSP 105


RESULT 8
US-08-362-453-10
; Sequence 10, Application US/08362453
; Patent No. 5684129
;  GENERAL INFORMATION:
;    APPLICANT:  FISH, Eleanor N.
;    TITLE OF INVENTION:  INTERFERON RECEPTOR BINDING PEPTIDES
;    NUMBER OF SEQUENCES:  17
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Nikaido, Marmelstein, Murray & Oram
;      STREET:  655 Fifteenth Street N.W. Suite 330
;      CITY:  Washington
;      STATE:  D.C.
;      COUNTRY:  U.S.A.
;      ZIP:  20005-5701
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/362,453
;      FILING DATE:  06-JAN-1995
;      CLASSIFICATION:  514
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 07/909,739
;      APPLICATION NUMBER:  FILING DATE: 07-JUL-1992
;      APPLICATION NUMBER:  US 07/980,525
;      APPLICATION NUMBER:  FILING DATE: 20-NOV-1992
;      APPLICATION NUMBER:  PCT/CA93/00279
;      APPLICATION NUMBER:  FILING DATE: 06-JUL-1993
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Kitts, Monica Chin
;      REGISTRATION NUMBER:  36,105
;      REFERENCE/DOCKET NUMBER:  P638-4017
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (202) 638-5000
;      TELEFAX:  (202) 638-4810
;  INFORMATION FOR SEQ ID NO:  10:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  150 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  unknown
;    MOLECULE TYPE:  protein
US-08-362-453-10

  Query Match          100.0%;  Score 42;  DB 1;  Length 150;
  Best Local Similarity  100.0%;  Pred. No. 0.27;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;
```

```
Qy          1 LTEKKYSP 8
              ||||||||
Db        126 LTEKKYSP 133


RESULT 9
US-08-362-453-11
; Sequence 11, Application US/08362453
; Patent No. 5684129
;  GENERAL INFORMATION:
;    APPLICANT:  FISH, Eleanor N.
;    TITLE OF INVENTION:  INTERFERON RECEPTOR BINDING PEPTIDES
;    NUMBER OF SEQUENCES:  17
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Nikaido, Marmelstein, Murray & Oram
;      STREET:  655 Fifteenth Street N.W. Suite 330
;      CITY:  Washington
;      STATE:  D.C.
;      COUNTRY:  U.S.A.
;      ZIP:  20005-5701
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/362,453
;      FILING DATE:  06-JAN-1995
;      CLASSIFICATION:  514
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 07/909,739
;      APPLICATION NUMBER:  FILING DATE: 07-JUL-1992
;      APPLICATION NUMBER:  US 07/980,525
;      APPLICATION NUMBER:  FILING DATE: 20-NOV-1992
;      APPLICATION NUMBER:  PCT/CA93/00279
;      APPLICATION NUMBER:  FILING DATE: 06-JUL-1993
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Kitts, Monica Chin
;      REGISTRATION NUMBER:  36,105
;      REFERENCE/DOCKET NUMBER:  P638-4017
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (202) 638-5000
;      TELEFAX:  (202) 638-4810
;  INFORMATION FOR SEQ ID NO:  11:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  150 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  unknown
;    MOLECULE TYPE:  protein
US-08-362-453-11

  Query Match             100.0%;  Score 42;  DB 1;  Length 150;
  Best Local Similarity   100.0%;  Pred. No. 0.27;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        126 LTEKKYSP 133


RESULT 10
US-08-362-453-12
; Sequence 12, Application US/08362453
; Patent No. 5684129
;  GENERAL INFORMATION:
;    APPLICANT:  FISH, Eleanor N.
;    TITLE OF INVENTION:  INTERFERON RECEPTOR BINDING PEPTIDES
;    NUMBER OF SEQUENCES:  17
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Nikaido, Marmelstein, Murray & Oram
;      STREET:  655 Fifteenth Street N.W. Suite 330
;      CITY:  Washington
;      STATE:  D.C.
;      COUNTRY:  U.S.A.
;      ZIP:  20005-5701
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/362,453
;      FILING DATE:  06-JAN-1995
;      CLASSIFICATION:  514
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 07/909,739
;      APPLICATION NUMBER:  FILING DATE: 07-JUL-1992
;      APPLICATION NUMBER:  US 07/980,525
;      APPLICATION NUMBER:  FILING DATE: 20-NOV-1992
;      APPLICATION NUMBER:  PCT/CA93/00279
;      APPLICATION NUMBER:  FILING DATE: 06-JUL-1993
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Kitts, Monica Chin
;      REGISTRATION NUMBER:  36,105
;      REFERENCE/DOCKET NUMBER:  P638-4017
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (202) 638-5000
;      TELEFAX:  (202) 638-4810
;  INFORMATION FOR SEQ ID NO:  12:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  150 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  unknown
;    MOLECULE TYPE:  protein
US-08-362-453-12

  Query Match             100.0%;  Score 42;  DB 1;  Length 150;
  Best Local Similarity   100.0%;  Pred. No. 0.27;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        126 LTEKKYSP 133


RESULT 11
US-08-362-453-15
; Sequence 15, Application US/08362453
; Patent No. 5684129
;  GENERAL INFORMATION:
;    APPLICANT:  FISH, Eleanor N.
;    TITLE OF INVENTION:  INTERFERON RECEPTOR BINDING PEPTIDES
;    NUMBER OF SEQUENCES:  17
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Nikaido, Marmelstein, Murray & Oram
;      STREET:  655 Fifteenth Street N.W. Suite 330
;      CITY:  Washington
;      STATE:  D.C.
;      COUNTRY:  U.S.A.
;      ZIP:  20005-5701
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/362,453
;      FILING DATE:  06-JAN-1995
;      CLASSIFICATION:  514
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 07/909,739
;      APPLICATION NUMBER:  FILING DATE: 07-JUL-1992
;      APPLICATION NUMBER:  US 07/980,525
;      APPLICATION NUMBER:  FILING DATE: 20-NOV-1992
;      APPLICATION NUMBER:  PCT/CA93/00279
;      APPLICATION NUMBER:  FILING DATE: 06-JUL-1993
```

```
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Kitts, Monica Chin
;      REGISTRATION NUMBER:  36,105
;      REFERENCE/DOCKET NUMBER:  P638-4017
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (202) 638-5000
;      TELEFAX:  (202) 638-4810
;  INFORMATION FOR SEQ ID NO:  15:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  162 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  unknown
;    MOLECULE TYPE:  protein
US-08-362-453-15

  Query Match           100.0%;  Score 42;  DB 1;  Length 162;
  Best Local Similarity  100.0%;  Pred. No. 0.3;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        127 LTEKKYSP 134


RESULT 12
US-08-362-453-13
; Sequence 13, Application US/08362453
; Patent No. 5684129
;  GENERAL INFORMATION:
;    APPLICANT:  FISH, Eleanor N.
;    TITLE OF INVENTION:  INTERFERON RECEPTOR BINDING PEPTIDES
;    NUMBER OF SEQUENCES:  17
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Nikaido, Marmelstein, Murray & Oram
;      STREET:  655 Fifteenth Street N.W. Suite 330
;      CITY:  Washington
;      STATE:  D.C.
;      COUNTRY:  U.S.A.
;      ZIP:  20005-5701
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/362,453
;      FILING DATE:  06-JAN-1995
;      CLASSIFICATION:  514
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 07/909,739
;      APPLICATION NUMBER:  FILING DATE: 07-JUL-1992
;      APPLICATION NUMBER:  US 07/980,525
;      APPLICATION NUMBER:  FILING DATE: 20-NOV-1992
;      APPLICATION NUMBER:  PCT/CA93/00279
;      APPLICATION NUMBER:  FILING DATE: 06-JUL-1993
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Kitts, Monica Chin
;      REGISTRATION NUMBER:  36,105
;      REFERENCE/DOCKET NUMBER:  P638-4017
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (202) 638-5000
;      TELEFAX:  (202) 638-4810
;  INFORMATION FOR SEQ ID NO:  13:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  165 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  unknown
;    MOLECULE TYPE:  protein
US-08-362-453-13

  Query Match           100.0%;  Score 42;  DB 1;  Length 165;
  Best Local Similarity  100.0%;  Pred. No. 0.3;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        130 LTEKKYSP 137


RESULT 13
US-08-362-453-14
; Sequence 14, Application US/08362453
; Patent No. 5684129
;  GENERAL INFORMATION:
;    APPLICANT:  FISH, Eleanor N.
;    TITLE OF INVENTION:  INTERFERON RECEPTOR BINDING PEPTIDES
;    NUMBER OF SEQUENCES:  17
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Nikaido, Marmelstein, Murray & Oram
;      STREET:  655 Fifteenth Street N.W. Suite 330
;      CITY:  Washington
;      STATE:  D.C.
;      COUNTRY:  U.S.A.
;      ZIP:  20005-5701
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/362,453
;      FILING DATE:  06-JAN-1995
;      CLASSIFICATION:  514
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 07/909,739
;      APPLICATION NUMBER:  FILING DATE: 07-JUL-1992
;      APPLICATION NUMBER:  US 07/980,525
;      APPLICATION NUMBER:  FILING DATE: 20-NOV-1992
;      APPLICATION NUMBER:  PCT/CA93/00279
;      APPLICATION NUMBER:  FILING DATE: 06-JUL-1993
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Kitts, Monica Chin
;      REGISTRATION NUMBER:  36,105
;      REFERENCE/DOCKET NUMBER:  P638-4017
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (202) 638-5000
;      TELEFAX:  (202) 638-4810
;  INFORMATION FOR SEQ ID NO:  14:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  165 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  unknown
;    MOLECULE TYPE:  protein
US-08-362-453-14

  Query Match           100.0%;  Score 42;  DB 1;  Length 165;
  Best Local Similarity  100.0%;  Pred. No. 0.3;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        130 LTEKKYSP 137


RESULT 14
US-09-744-754C-13
; Sequence 13, Application US/09744754C
; Patent No. 6685933
; GENERAL INFORMATION:
;  APPLICANT: Zoon, et al.
;  TITLE OF INVENTION: Interferon Alpha Hybrids
;  FILE REFERENCE: 4239-56957
;  CURRENT APPLICATION NUMBER: US/09/744,754C
;  CURRENT FILING DATE:  2001-01-24
;  PRIOR APPLICATION NUMBER: US 60/094,407
;  PRIOR FILING DATE: 1998-07-28
```

```
;  PRIOR APPLICATION NUMBER: PCT/US99/15284
;  PRIOR FILING DATE: 1999-07-06
;  NUMBER OF SEQ ID NOS: 42
;  SOFTWARE: PatentIn version 3.2
; SEQ ID NO 13
;   LENGTH: 165
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Gene Fusion
US-09-744-754C-13

  Query Match             100.0%;  Score 42;  DB 4;  Length 165;
  Best Local Similarity   100.0%;  Pred. No. 0.3;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        130 LTEKKYSP 137


RESULT 15
US-08-362-453-8
; Sequence 8, Application US/08362453
; Patent No. 5684129
;  GENERAL INFORMATION:
;    APPLICANT:  FISH, Eleanor N.
;    TITLE OF INVENTION:  INTERFERON RECEPTOR BINDING PEPTIDES
;    NUMBER OF SEQUENCES:  17
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Nikaido, Marmelstein, Murray & Oram
;      STREET:  655 Fifteenth Street N.W. Suite 330
;      CITY:  Washington
;      STATE:  D.C.
;      COUNTRY:  U.S.A.
;      ZIP:  20005-5701
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/362,453
;      FILING DATE:  06-JAN-1995
;      CLASSIFICATION:  514
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 07/909,739
;      APPLICATION NUMBER:  FILING DATE: 07-JUL-1992
;      APPLICATION NUMBER:  US 07/980,525
;      APPLICATION NUMBER:  FILING DATE: 20-NOV-1992
;      APPLICATION NUMBER:  PCT/CA93/00279
;      APPLICATION NUMBER:  FILING DATE: 06-JUL-1993
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Kitts, Monica Chin
;      REGISTRATION NUMBER:  36,105
;      REFERENCE/DOCKET NUMBER:  P638-4017
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (202) 638-5000
;      TELEFAX:  (202) 638-4810
;  INFORMATION FOR SEQ ID NO:  8:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  166 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  unknown
;    MOLECULE TYPE:  protein
US-08-362-453-8

  Query Match             100.0%;  Score 42;  DB 1;  Length 166;
  Best Local Similarity   100.0%;  Pred. No. 0.3;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        131 LTEKKYSP 138


Search completed: May 19, 2005, 12:56:39
Job time : 42 secs
```

8

GenCore version 5.1.6


OM protein - protein search, using sw model

Run on: May 19, 2005, 12:55:17 ; Search time 134 Seconds
(without alignments)
19.971 Million cell updates/sec

Title: US-09-424-080B-1
Perfect score: 42
Sequence: 1 LTEKKYSP 8

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1434725 seqs, 334507595 residues

Total number of hits satisfying chosen parameters: 1434725

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Published_Applications_AA:*
1: /cgn2_6/ptodata/2/pubpaa/US07_PUBCOMB.pep:*
2: /cgn2_6/ptodata/2/pubpaa/PCT_NEW_PUB.pep:*
3: /cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*
4: /cgn2_6/ptodata/2/pubpaa/US06_PUBCOMB.pep:*
5: /cgn2_6/ptodata/2/pubpaa/US07_NEW_PUB.pep:*
6: /cgn2_6/ptodata/2/pubpaa/PCTUS_PUBCOMB.pep:*
7: /cgn2_6/ptodata/2/pubpaa/US08_NEW_PUB.pep:*
8: /cgn2_6/ptodata/2/pubpaa/US08_PUBCOMB.pep:*
9: /cgn2_6/ptodata/2/pubpaa/US09A_PUBCOMB.pep:*
10: /cgn2_6/ptodata/2/pubpaa/US09B_PUBCOMB.pep:*
11: /cgn2_6/ptodata/2/pubpaa/US09C_PUBCOMB.pep:*
12: /cgn2_6/ptodata/2/pubpaa/US09_NEW_PUB.pep:*
13: /cgn2_6/ptodata/2/pubpaa/US10A_PUBCOMB.pep:*
14: /cgn2_6/ptodata/2/pubpaa/US10B_PUBCOMB.pep:*
15: /cgn2_6/ptodata/2/pubpaa/US10C_PUBCOMB.pep:*
16: /cgn2_6/ptodata/2/pubpaa/US10D_PUBCOMB.pep:*
17: /cgn2_6/ptodata/2/pubpaa/US10_NEW_PUB.pep:*
18: /cgn2_6/ptodata/2/pubpaa/US11_NEW_PUB.pep:*
19: /cgn2_6/ptodata/2/pubpaa/US60_NEW_PUB.pep:*
20: /cgn2_6/ptodata/2/pubpaa/US60_PUBCOMB.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | % Query Match | Length | DB | ID | Description |
|---|---|---|---|---|---|---|
| 1 | 42 | 100.0 | 132 | 15 | US-10-094-886-20 | Sequence 20, Appl |
| 2 | 42 | 100.0 | 151 | 15 | US-10-094-886-18 | Sequence 18, Appl |
| 3 | 42 | 100.0 | 165 | 15 | US-10-615-723-13 | Sequence 13, Appl |
| 4 | 42 | 100.0 | 165 | 16 | US-10-658-834A-111 | Sequence 111, App |
| 5 | 42 | 100.0 | 165 | 16 | US-10-658-834A-232 | Sequence 232, App |
| 6 | 42 | 100.0 | 165 | 17 | US-10-775-180-457 | Sequence 457, App |
| 7 | 42 | 100.0 | 165 | 17 | US-10-775-180-467 | Sequence 467, App |
| 8 | 42 | 100.0 | 165 | 17 | US-10-775-180-472 | Sequence 472, App |
| 9 | 42 | 100.0 | 165 | 17 | US-10-775-180-477 | Sequence 477, App |
| 10 | 42 | 100.0 | 166 | 9 | US-09-559-671A-75 | Sequence 75, Appl |
| 11 | 42 | 100.0 | 166 | 9 | US-09-559-671A-76 | Sequence 76, Appl |
| 12 | 42 | 100.0 | 166 | 9 | US-09-559-671A-77 | Sequence 77, Appl |
| 13 | 42 | 100.0 | 166 | 9 | US-09-559-671A-79 | Sequence 79, Appl |
| 14 | 42 | 100.0 | 166 | 9 | US-09-559-671A-80 | Sequence 80, Appl |
| 15 | 42 | 100.0 | 166 | 9 | US-09-559-671A-83 | Sequence 83, Appl |
| 16 | 42 | 100.0 | 166 | 9 | US-09-559-671A-84 | Sequence 84, Appl |
| 17 | 42 | 100.0 | 166 | 9 | US-09-559-671A-85 | Sequence 85, Appl |
| 18 | 42 | 100.0 | 166 | 9 | US-09-977-034-2 | Sequence 2, Appli |
| 19 | 42 | 100.0 | 166 | 9 | US-09-977-034-8 | Sequence 8, Appli |
| 20 | 42 | 100.0 | 166 | 9 | US-09-977-034-10 | Sequence 10, Appl |
| 21 | 42 | 100.0 | 166 | 9 | US-09-977-034-11 | Sequence 11, Appl |
| 22 | 42 | 100.0 | 166 | 9 | US-09-977-034-12 | Sequence 12, Appl |
| 23 | 42 | 100.0 | 166 | 9 | US-09-977-034-18 | Sequence 18, Appl |
| 24 | 42 | 100.0 | 166 | 9 | US-09-977-034-19 | Sequence 19, Appl |
| 25 | 42 | 100.0 | 166 | 9 | US-09-908-193-31 | Sequence 31, Appl |
| 26 | 42 | 100.0 | 166 | 10 | US-09-954-692-75 | Sequence 75, Appl |
| 27 | 42 | 100.0 | 166 | 10 | US-09-954-692-76 | Sequence 76, Appl |
| 28 | 42 | 100.0 | 166 | 10 | US-09-954-692-77 | Sequence 77, Appl |
| 29 | 42 | 100.0 | 166 | 10 | US-09-954-692-79 | Sequence 79, Appl |
| 30 | 42 | 100.0 | 166 | 10 | US-09-954-692-80 | Sequence 80, Appl |
| 31 | 42 | 100.0 | 166 | 10 | US-09-954-692-83 | Sequence 83, Appl |
| 32 | 42 | 100.0 | 166 | 10 | US-09-954-692-84 | Sequence 84, Appl |
| 33 | 42 | 100.0 | 166 | 10 | US-09-954-692-85 | Sequence 85, Appl |
| 34 | 42 | 100.0 | 166 | 11 | US-09-994-425-2 | Sequence 2, Appli |
| 35 | 42 | 100.0 | 166 | 14 | US-10-137-127-2 | Sequence 2, Appli |
| 36 | 42 | 100.0 | 166 | 14 | US-10-137-127-6 | Sequence 6, Appli |
| 37 | 42 | 100.0 | 166 | 14 | US-10-400-377-4 | Sequence 4, Appli |
| 38 | 42 | 100.0 | 166 | 14 | US-10-400-708-4 | Sequence 4, Appli |
| 39 | 42 | 100.0 | 166 | 14 | US-10-298-148-4 | Sequence 4, Appli |
| 40 | 42 | 100.0 | 166 | 15 | US-10-389-674-38 | Sequence 38, Appl |
| 41 | 42 | 100.0 | 166 | 15 | US-10-389-674-43 | Sequence 43, Appl |
| 42 | 42 | 100.0 | 166 | 15 | US-10-389-674-44 | Sequence 44, Appl |
| 43 | 42 | 100.0 | 166 | 15 | US-10-389-674-47 | Sequence 47, Appl |
| 44 | 42 | 100.0 | 166 | 15 | US-10-389-674-48 | Sequence 48, Appl |
| 45 | 42 | 100.0 | 166 | 15 | US-10-389-674-49 | Sequence 49, Appl |

ALIGNMENTS

RESULT 1
US-10-094-886-20
; Sequence 20, Application US/10094886
; Publication No. US20040002120A1
; GENERAL INFORMATION:
; APPLICANT: Kekuda, Ramesh
; APPLICANT: Tchernev, Velizar T.
; APPLICANT: Liu, Xiaohong
; APPLICANT: Spytek, Kimberly A.
; APPLICANT: Patturajan, Meera
; APPLICANT: Burgess, Catherine
; APPLICANT: Vernet, Corine A.
; APPLICANT: Li, Li
; APPLICANT: Gorman, Linda
; APPLICANT: Malyankar, Uriel M.
; APPLICANT: Boldog, Ferenc
; APPLICANT: Guo, Xiaojia
; APPLICANT: Shenoy, Suresh
; APPLICANT: Padigaru, Muralidhara
; APPLICANT: Taupier, Raymond J., Jr.
; APPLICANT: Miller, Charles
; APPLICANT: Casman, Stacie
; APPLICANT: Pena, Carol
; APPLICANT: Gangolli, Esha
; APPLICANT: Gusev, Vladimir
; APPLICANT: Smithson, Glennda
; APPLICANT: Zerhusen, Bryan
; APPLICANT: Gerlach, Valerie
; APPLICANT: Pochart, Pascal
; APPLICANT: Fernandes, Elma
; APPLICANT: Shimkets, Richard
; APPLICANT: Rastelli, Luca
; APPLICANT: Spaderna, Steven
; APPLICANT: LaRochelle, William
; APPLICANT: Zhong, Mei
; TITLE OF INVENTION: THERAPEUTIC POLYPEPTIDES, NUCLEIC ACIDS ENCODING SAME, AND METHODS

```
;  FILE REFERENCE: 21402-290 B
;  CURRENT APPLICATION NUMBER: US/10/094,886
;  CURRENT FILING DATE:  2002-03-07
;  PRIOR APPLICATION NUMBER: 60/274,322
;  PRIOR FILING DATE: 2001-03-08
;  PRIOR APPLICATION NUMBER: 60/313,182
;  PRIOR FILING DATE: 2001-08-17
;  PRIOR APPLICATION NUMBER: 60/288,052
;  PRIOR FILING DATE: 2001-05-02
;  PRIOR APPLICATION NUMBER: 60/318,510
;  PRIOR FILING DATE: 2001-09-10
;  PRIOR APPLICATION NUMBER: 60/274,281
;  PRIOR FILING DATE: 2001-03-08
;  PRIOR APPLICATION NUMBER: 60/314,018
;  PRIOR FILING DATE: 2001-08-21
;  PRIOR APPLICATION NUMBER: 60/274,194
;  PRIOR FILING DATE: 2001-03-08
;  PRIOR APPLICATION NUMBER: 60/274,849
;  PRIOR FILING DATE: 2001-03-09
;  PRIOR APPLICATION NUMBER: 60/296,693
;  PRIOR FILING DATE: 2001-06-07
;  PRIOR APPLICATION NUMBER: 60/313,626
;  PRIOR FILING DATE: 2001-08-21
;  Remaining Prior Application data removed - See File Wrapper or PALM.
;  NUMBER OF SEQ ID NOS: 298
;  SOFTWARE: PatentIn 2.1
; SEQ ID NO 20
;   LENGTH: 132
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-094-886-20

  Query Match           100.0%;  Score 42;  DB 15;  Length 132;
  Best Local Similarity  100.0%;  Pred. No. 1.6;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db         95 LTEKKYSP 102


RESULT 2
US-10-094-886-18
; Sequence 18, Application US/10094886
; Publication No. US20040002120A1
; GENERAL INFORMATION:
;  APPLICANT: Kekuda, Ramesh
;  APPLICANT:  Tchernev, Velizar T.
;  APPLICANT:  Liu, Xiaohong
;  APPLICANT:  Spytek, Kimberly A.
;  APPLICANT:  Patturajan, Meera
;  APPLICANT:  Burgess, Catherine
;  APPLICANT:  Vernet, Corine A.
;  APPLICANT:  Li, Li
;  APPLICANT:  Gorman, Linda
;  APPLICANT:  Malyankar, Uriel M.
;  APPLICANT:  Boldog, Ferenc
;  APPLICANT:  Guo, Xiaojia
;  APPLICANT:  Shenoy, Suresh
;  APPLICANT:  Padigaru, Muralidhara
;  APPLICANT:  Taupier, Raymond J., Jr.
;  APPLICANT:  Miller, Charles
;  APPLICANT:  Casman, Stacie
;  APPLICANT:  Pena, Carol
;  APPLICANT:  Gangolli, Esha
;  APPLICANT:  Gusev, Vladimir
;  APPLICANT:  Smithson, Glennda
;  APPLICANT:  Zerhusen, Bryan
;  APPLICANT:  Gerlach, Valerie
;  APPLICANT:  Pochart, Pascal
;  APPLICANT:  Fernandes, Elma
;  APPLICANT:  Shimkets, Richard
;  APPLICANT:  Rastelli, Luca
;  APPLICANT:  Spaderna, Steven
;  APPLICANT:  LaRochelle, William
;  APPLICANT:  Zhong, Mei
;  TITLE OF INVENTION: THERAPEUTIC POLYPEPTIDES, NUCLEIC ACIDS ENCODING SAME, AND METHOD
;  FILE REFERENCE: 21402-290 B
;  CURRENT APPLICATION NUMBER: US/10/094,886
;  CURRENT FILING DATE:  2002-03-07
;  PRIOR APPLICATION NUMBER: 60/274,322
;  PRIOR FILING DATE: 2001-03-08
;  PRIOR APPLICATION NUMBER: 60/313,182
;  PRIOR FILING DATE: 2001-08-17
;  PRIOR APPLICATION NUMBER: 60/288,052
;  PRIOR FILING DATE: 2001-05-02
;  PRIOR APPLICATION NUMBER: 60/318,510
;  PRIOR FILING DATE: 2001-09-10
;  PRIOR APPLICATION NUMBER: 60/274,281
;  PRIOR FILING DATE: 2001-03-08
;  PRIOR APPLICATION NUMBER: 60/314,018
;  PRIOR FILING DATE: 2001-08-21
;  PRIOR APPLICATION NUMBER: 60/274,194
;  PRIOR FILING DATE: 2001-03-08
;  PRIOR APPLICATION NUMBER: 60/274,849
;  PRIOR FILING DATE: 2001-03-09
;  PRIOR APPLICATION NUMBER: 60/296,693
;  PRIOR FILING DATE: 2001-06-07
;  PRIOR APPLICATION NUMBER: 60/313,626
;  PRIOR FILING DATE: 2001-08-21
;  Remaining Prior Application data removed - See File Wrapper or PALM.
;  NUMBER OF SEQ ID NOS: 298
;  SOFTWARE: PatentIn 2.1
; SEQ ID NO 18
;   LENGTH: 151
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-094-886-18

  Query Match           100.0%;  Score 42;  DB 15;  Length 151;
  Best Local Similarity  100.0%;  Pred. No. 1.8;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        116 LTEKKYSP 123


RESULT 3
US-10-615-723-13
; Sequence 13, Application US/10615723
; Publication No. US20040018172A1
; GENERAL INFORMATION:
;  APPLICANT: Zoon, et al.
;  TITLE OF INVENTION: Interferon Alpha Hybrids
;  FILE REFERENCE: 4239-56957
;  CURRENT APPLICATION NUMBER: US/10/615,723
;  CURRENT FILING DATE:  2003-07-08
;  PRIOR APPLICATION NUMBER: US/09/744,754C
;  PRIOR FILING DATE: 2001-01-24
;  PRIOR APPLICATION NUMBER: US 60/094,407
;  PRIOR FILING DATE: 1998-07-28
;  PRIOR APPLICATION NUMBER: PCT/US99/15284
;  PRIOR FILING DATE: 1999-07-06
;  NUMBER OF SEQ ID NOS: 42
;  SOFTWARE: PatentIn version 3.2
; SEQ ID NO 13
;   LENGTH: 165
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Gene Fusion
US-10-615-723-13

  Query Match           100.0%;  Score 42;  DB 15;  Length 165;
  Best Local Similarity  100.0%;  Pred. No. 1.9;
```

Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 LTEKKYSP 8
              ||||||||
Db        130 LTEKKYSP 137
```

RESULT 4
US-10-658-834A-111
; Sequence 111, Application US/10658834A
; Publication No. US20040132977A1
; GENERAL INFORMATION:
; APPLICANT: Gantier, Rene
; APPLICANT: Guyon, Thierry
; APPLICANT: Drittanti, Lila
; APPLICANT: Vega, Manuel
; TITLE OF INVENTION: Rational Evolution of Cytokines for Higher Stability, Encoding Nu
; TITLE OF INVENTION: Acid
; TITLE OF INVENTION: Molecules and Related Applications
; FILE REFERENCE: 38751-922
; CURRENT APPLICATION NUMBER: US/10/658,834A
; CURRENT FILING DATE: 2003-09-08
; PRIOR APPLICATION NUMBER: 60/457,135
; PRIOR FILING DATE: 2003-03-21
; PRIOR APPLICATION NUMBER: 60/409,898
; PRIOR FILING DATE: 2002-09-09
; NUMBER OF SEQ ID NOS: 1306
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 111
; LENGTH: 165
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: K131T Mutant IFN-alpha 2b
US-10-658-834A-111

Query Match 100.0%; Score 42; DB 16; Length 165;
Best Local Similarity 100.0%; Pred. No. 1.9;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 LTEKKYSP 8
              ||||||||
Db        130 LTEKKYSP 137
```

RESULT 5
US-10-658-834A-232
; Sequence 232, Application US/10658834A
; Publication No. US20040132977A1
; GENERAL INFORMATION:
; APPLICANT: Gantier, Rene
; APPLICANT: Guyon, Thierry
; APPLICANT: Drittanti, Lila
; APPLICANT: Vega, Manuel
; TITLE OF INVENTION: Rational Evolution of Cytokines for Higher Stability, Encoding Nu
; TITLE OF INVENTION: Acid
; TITLE OF INVENTION: Molecules and Related Applications
; FILE REFERENCE: 38751-922
; CURRENT APPLICATION NUMBER: US/10/658,834A
; CURRENT FILING DATE: 2003-09-08
; PRIOR APPLICATION NUMBER: 60/457,135
; PRIOR FILING DATE: 2003-03-21
; PRIOR APPLICATION NUMBER: 60/409,898
; PRIOR FILING DATE: 2002-09-09
; NUMBER OF SEQ ID NOS: 1306
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 232
; LENGTH: 165
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Interferon alpha consensus sequence
US-10-658-834A-232

Query Match 100.0%; Score 42; DB 16; Length 165;
Best Local Similarity 100.0%; Pred. No. 1.9;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 LTEKKYSP 8
              ||||||||
Db        130 LTEKKYSP 137
```

RESULT 6
US-10-775-180-457
; Sequence 457, Application US/10775180
; Publication No. US20050054570A1
; GENERAL INFORMATION:
; APPLICANT: Rosen, Craig A.
; APPLICANT: Haseltine, William A.
; TITLE OF INVENTION: Albumin Fusion Proteins
; FILE REFERENCE: PF574
; CURRENT APPLICATION NUMBER: US/10/775,180
; CURRENT FILING DATE: 2004-02-11
; PRIOR APPLICATION NUMBER: PCT/US02/40892
; PRIOR FILING DATE: 2002-12-23
; PRIOR APPLICATION NUMBER: 60/341,811
; PRIOR FILING DATE: 2001-12-21
; PRIOR APPLICATION NUMBER: 60/360,000
; PRIOR FILING DATE: 2002-02-28
; PRIOR APPLICATION NUMBER: 60/378,950
; PRIOR FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: 60/398,008
; PRIOR FILING DATE: 2002-07-24
; PRIOR APPLICATION NUMBER: 60/411,355
; PRIOR FILING DATE: 2002-09-18
; PRIOR APPLICATION NUMBER: 60/414,984
; PRIOR FILING DATE: 2002-10-02
; PRIOR APPLICATION NUMBER: 60/417,611
; PRIOR FILING DATE: 2002-10-11
; PRIOR APPLICATION NUMBER: 60/420,246
; PRIOR FILING DATE: 2002-10-23
; PRIOR APPLICATION NUMBER: 60/423,623
; PRIOR FILING DATE: 2002-11-05
; Remaining Prior Application data removed - See File Wrapper or PALM.
; NUMBER OF SEQ ID NOS: 858
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 457
; LENGTH: 165
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-775-180-457

Query Match 100.0%; Score 42; DB 17; Length 165;
Best Local Similarity 100.0%; Pred. No. 1.9;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 LTEKKYSP 8
              ||||||||
Db        130 LTEKKYSP 137
```

RESULT 7
US-10-775-180-467
; Sequence 467, Application US/10775180
; Publication No. US20050054570A1
; GENERAL INFORMATION:
; APPLICANT: Rosen, Craig A.
; APPLICANT: Haseltine, William A.
; TITLE OF INVENTION: Albumin Fusion Proteins
; FILE REFERENCE: PF574
; CURRENT APPLICATION NUMBER: US/10/775,180
; CURRENT FILING DATE: 2004-02-11
; PRIOR APPLICATION NUMBER: PCT/US02/40892
; PRIOR FILING DATE: 2002-12-23
; PRIOR APPLICATION NUMBER: 60/341,811

```
;  PRIOR FILING DATE: 2001-12-21
;  PRIOR APPLICATION NUMBER: 60/360,000
;  PRIOR FILING DATE: 2002-02-28
;  PRIOR APPLICATION NUMBER: 60/378,950
;  PRIOR FILING DATE: 2002-05-10
;  PRIOR APPLICATION NUMBER: 60/398,008
;  PRIOR FILING DATE: 2002-07-24
;  PRIOR APPLICATION NUMBER: 60/411,355
;  PRIOR FILING DATE: 2002-09-18
;  PRIOR APPLICATION NUMBER: 60/414,984
;  PRIOR FILING DATE: 2002-10-02
;  PRIOR APPLICATION NUMBER: 60/417,611
;  PRIOR FILING DATE: 2002-10-11
;  PRIOR APPLICATION NUMBER: 60/420,246
;  PRIOR FILING DATE: 2002-10-23
;  PRIOR APPLICATION NUMBER: 60/423,623
;  PRIOR FILING DATE: 2002-11-05
;  Remaining Prior Application data removed - See File Wrapper or PALM.
;  NUMBER OF SEQ ID NOS: 858
;  SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 467
;   LENGTH: 165
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-775-180-467

  Query Match             100.0%;  Score 42;  DB 17;  Length 165;
  Best Local Similarity   100.0%;  Pred. No. 1.9;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        130 LTEKKYSP 137


RESULT 8
US-10-775-180-472
; Sequence 472, Application US/10775180
; Publication No. US20050054570A1
; GENERAL INFORMATION:
;  APPLICANT: Rosen, Craig A.
;  APPLICANT:  Haseltine, William A.
;  TITLE OF INVENTION: Albumin Fusion Proteins
;  FILE REFERENCE: PF574
;  CURRENT APPLICATION NUMBER: US/10/775,180
;  CURRENT FILING DATE:  2004-02-11
;  PRIOR APPLICATION NUMBER: PCT/US02/40892
;  PRIOR FILING DATE: 2002-12-23
;  PRIOR APPLICATION NUMBER: 60/341,811
;  PRIOR FILING DATE: 2001-12-21
;  PRIOR APPLICATION NUMBER: 60/360,000
;  PRIOR FILING DATE: 2002-02-28
;  PRIOR APPLICATION NUMBER: 60/378,950
;  PRIOR FILING DATE: 2002-05-10
;  PRIOR APPLICATION NUMBER: 60/398,008
;  PRIOR FILING DATE: 2002-07-24
;  PRIOR APPLICATION NUMBER: 60/411,355
;  PRIOR FILING DATE: 2002-09-18
;  PRIOR APPLICATION NUMBER: 60/414,984
;  PRIOR FILING DATE: 2002-10-02
;  PRIOR APPLICATION NUMBER: 60/417,611
;  PRIOR FILING DATE: 2002-10-11
;  PRIOR APPLICATION NUMBER: 60/420,246
;  PRIOR FILING DATE: 2002-10-23
;  PRIOR APPLICATION NUMBER: 60/423,623
;  PRIOR FILING DATE: 2002-11-05
;  Remaining Prior Application data removed - See File Wrapper or PALM.
;  NUMBER OF SEQ ID NOS: 858
;  SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 472
;   LENGTH: 165
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-775-180-472

  Query Match             100.0%;  Score 42;  DB 17;  Length 165;
  Best Local Similarity   100.0%;  Pred. No. 1.9;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        130 LTEKKYSP 137


RESULT 9
US-10-775-180-477
; Sequence 477, Application US/10775180
; Publication No. US20050054570A1
; GENERAL INFORMATION:
;  APPLICANT: Rosen, Craig A.
;  APPLICANT:  Haseltine, William A.
;  TITLE OF INVENTION: Albumin Fusion Proteins
;  FILE REFERENCE: PF574
;  CURRENT APPLICATION NUMBER: US/10/775,180
;  CURRENT FILING DATE:  2004-02-11
;  PRIOR APPLICATION NUMBER: PCT/US02/40892
;  PRIOR FILING DATE: 2002-12-23
;  PRIOR APPLICATION NUMBER: 60/341,811
;  PRIOR FILING DATE: 2001-12-21
;  PRIOR APPLICATION NUMBER: 60/360,000
;  PRIOR FILING DATE: 2002-02-28
;  PRIOR APPLICATION NUMBER: 60/378,950
;  PRIOR FILING DATE: 2002-05-10
;  PRIOR APPLICATION NUMBER: 60/398,008
;  PRIOR FILING DATE: 2002-07-24
;  PRIOR APPLICATION NUMBER: 60/411,355
;  PRIOR FILING DATE: 2002-09-18
;  PRIOR APPLICATION NUMBER: 60/414,984
;  PRIOR FILING DATE: 2002-10-02
;  PRIOR APPLICATION NUMBER: 60/417,611
;  PRIOR FILING DATE: 2002-10-11
;  PRIOR APPLICATION NUMBER: 60/420,246
;  PRIOR FILING DATE: 2002-10-23
;  PRIOR APPLICATION NUMBER: 60/423,623
;  PRIOR FILING DATE: 2002-11-05
;  Remaining Prior Application data removed - See File Wrapper or PALM.
;  NUMBER OF SEQ ID NOS: 858
;  SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 477
;   LENGTH: 165
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-775-180-477

  Query Match             100.0%;  Score 42;  DB 17;  Length 165;
  Best Local Similarity   100.0%;  Pred. No. 1.9;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        130 LTEKKYSP 137


RESULT 10
US-09-559-671A-75
; Sequence 75, Application US/09559671A
; Patent No. US20020051976A1
; GENERAL INFORMATION:
;  APPLICANT: Patten, Phillip
;  APPLICANT:  Stemmer, Willem P.C.
;  TITLE OF INVENTION: METHODS AND COMPOSITIONS FOR POLYPEPTIDE ENGINEERING
;  FILE REFERENCE: 02-020503US
;  CURRENT APPLICATION NUMBER: US/09/559,671A
;  CURRENT FILING DATE:  2001-05-25
;  PRIOR APPLICATION NUMBER: 08/769,062
;  PRIOR FILING DATE: 1996-12-18
```

; PRIOR APPLICATION NUMBER: 08/198,431
; PRIOR FILING DATE: 1994-02-17
; PRIOR APPLICATION NUMBER: 08/425,684
; PRIOR FILING DATE: 1995-04-18
; PRIOR APPLICATION NUMBER: 08/537,874
; PRIOR FILING DATE: 1995-10-30
; NUMBER OF SEQ ID NOS: 101
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 75
; LENGTH: 166
; TYPE: PRT
; ORGANISM: consensus alpha interferon
US-09-559-671A-75

Query Match 100.0%; Score 42; DB 9; Length 166;
Best Local Similarity 100.0%; Pred. No. 2;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 LTEKKYSP 8
||||||||
Db 131 LTEKKYSP 138

RESULT 11
US-09-559-671A-76
; Sequence 76, Application US/09559671A
; Patent No. US20020051976A1
; GENERAL INFORMATION:
; APPLICANT: Patten, Phillip
; APPLICANT: Stemmer, Willem P.C.
; TITLE OF INVENTION: METHODS AND COMPOSITIONS FOR POLYPEPTIDE ENGINEERING
; FILE REFERENCE: 02-020503US
; CURRENT APPLICATION NUMBER: US/09/559,671A
; CURRENT FILING DATE: 2001-05-25
; PRIOR APPLICATION NUMBER: 08/769,062
; PRIOR FILING DATE: 1996-12-18
; PRIOR APPLICATION NUMBER: 08/198,431
; PRIOR FILING DATE: 1994-02-17
; PRIOR APPLICATION NUMBER: 08/425,684
; PRIOR FILING DATE: 1995-04-18
; PRIOR APPLICATION NUMBER: 08/537,874
; PRIOR FILING DATE: 1995-10-30
; NUMBER OF SEQ ID NOS: 101
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 76
; LENGTH: 166
; TYPE: PRT
; ORGANISM: human alpha interferon
US-09-559-671A-76

Query Match 100.0%; Score 42; DB 9; Length 166;
Best Local Similarity 100.0%; Pred. No. 2;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 LTEKKYSP 8
||||||||
Db 131 LTEKKYSP 138

RESULT 12
US-09-559-671A-77
; Sequence 77, Application US/09559671A
; Patent No. US20020051976A1
; GENERAL INFORMATION:
; APPLICANT: Patten, Phillip
; APPLICANT: Stemmer, Willem P.C.
; TITLE OF INVENTION: METHODS AND COMPOSITIONS FOR POLYPEPTIDE ENGINEERING
; FILE REFERENCE: 02-020503US
; CURRENT APPLICATION NUMBER: US/09/559,671A
; CURRENT FILING DATE: 2001-05-25
; PRIOR APPLICATION NUMBER: 08/769,062
; PRIOR FILING DATE: 1996-12-18
; PRIOR APPLICATION NUMBER: 08/198,431
; PRIOR FILING DATE: 1994-02-17
; PRIOR APPLICATION NUMBER: 08/425,684
; PRIOR FILING DATE: 1995-04-18
; PRIOR APPLICATION NUMBER: 08/537,874
; PRIOR FILING DATE: 1995-10-30
; NUMBER OF SEQ ID NOS: 101
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 77
; LENGTH: 166
; TYPE: PRT
; ORGANISM: human alpha interferon
US-09-559-671A-77

Query Match 100.0%; Score 42; DB 9; Length 166;
Best Local Similarity 100.0%; Pred. No. 2;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 LTEKKYSP 8
||||||||
Db 131 LTEKKYSP 138

RESULT 13
US-09-559-671A-79
; Sequence 79, Application US/09559671A
; Patent No. US20020051976A1
; GENERAL INFORMATION:
; APPLICANT: Patten, Phillip
; APPLICANT: Stemmer, Willem P.C.
; TITLE OF INVENTION: METHODS AND COMPOSITIONS FOR POLYPEPTIDE ENGINEERING
; FILE REFERENCE: 02-020503US
; CURRENT APPLICATION NUMBER: US/09/559,671A
; CURRENT FILING DATE: 2001-05-25
; PRIOR APPLICATION NUMBER: 08/769,062
; PRIOR FILING DATE: 1996-12-18
; PRIOR APPLICATION NUMBER: 08/198,431
; PRIOR FILING DATE: 1994-02-17
; PRIOR APPLICATION NUMBER: 08/425,684
; PRIOR FILING DATE: 1995-04-18
; PRIOR APPLICATION NUMBER: 08/537,874
; PRIOR FILING DATE: 1995-10-30
; NUMBER OF SEQ ID NOS: 101
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 79
; LENGTH: 166
; TYPE: PRT
; ORGANISM: human alpha interferon
US-09-559-671A-79

Query Match 100.0%; Score 42; DB 9; Length 166;
Best Local Similarity 100.0%; Pred. No. 2;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 LTEKKYSP 8
||||||||
Db 131 LTEKKYSP 138

RESULT 14
US-09-559-671A-80
; Sequence 80, Application US/09559671A
; Patent No. US20020051976A1
; GENERAL INFORMATION:
; APPLICANT: Patten, Phillip
; APPLICANT: Stemmer, Willem P.C.
; TITLE OF INVENTION: METHODS AND COMPOSITIONS FOR POLYPEPTIDE ENGINEERING
; FILE REFERENCE: 02-020503US
; CURRENT APPLICATION NUMBER: US/09/559,671A
; CURRENT FILING DATE: 2001-05-25
; PRIOR APPLICATION NUMBER: 08/769,062
; PRIOR FILING DATE: 1996-12-18
; PRIOR APPLICATION NUMBER: 08/198,431
; PRIOR FILING DATE: 1994-02-17

```
;  PRIOR APPLICATION NUMBER: 08/425,684
;  PRIOR FILING DATE: 1995-04-18
;  PRIOR APPLICATION NUMBER: 08/537,874
;  PRIOR FILING DATE: 1995-10-30
;  NUMBER OF SEQ ID NOS: 101
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 80
;   LENGTH: 166
;   TYPE: PRT
;   ORGANISM: human alpha interferon
US-09-559-671A-80

  Query Match             100.0%;  Score 42;  DB 9;  Length 166;
  Best Local Similarity   100.0%;  Pred. No. 2;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        131 LTEKKYSP 138


RESULT 15
US-09-559-671A-83
; Sequence 83, Application US/09559671A
; Patent No. US20020051976A1
; GENERAL INFORMATION:
;  APPLICANT: Patten, Phillip
;  APPLICANT:  Stemmer, Willem P.C.
;  TITLE OF INVENTION: METHODS AND COMPOSITIONS FOR POLYPEPTIDE ENGINEERING
;  FILE REFERENCE: 02-020503US
;  CURRENT APPLICATION NUMBER: US/09/559,671A
;  CURRENT FILING DATE:  2001-05-25
;  PRIOR APPLICATION NUMBER: 08/769,062
;  PRIOR FILING DATE: 1996-12-18
;  PRIOR APPLICATION NUMBER: 08/198,431
;  PRIOR FILING DATE: 1994-02-17
;  PRIOR APPLICATION NUMBER: 08/425,684
;  PRIOR FILING DATE: 1995-04-18
;  PRIOR APPLICATION NUMBER: 08/537,874
;  PRIOR FILING DATE: 1995-10-30
;  NUMBER OF SEQ ID NOS: 101
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 83
;   LENGTH: 166
;   TYPE: PRT
;   ORGANISM: human alpha interferon
US-09-559-671A-83

  Query Match             100.0%;  Score 42;  DB 9;  Length 166;
  Best Local Similarity   100.0%;  Pred. No. 2;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        131 LTEKKYSP 138


Search completed: May 19, 2005, 13:08:09
Job time : 135 secs
```

GenCore version 5.1.6


OM protein - protein search, using sw model

Run on: May 19, 2005, 12:39:16 ; Search time 39 Seconds
(without alignments)
19.737 Million cell updates/sec

Title: US-09-424-080B-1
Perfect score: 42
Sequence: 1 LTEKKYSP 8

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues

Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_79:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | % Query Match | Length | DB | ID | Description |
|---|---|---|---|---|---|---|
| 1 | 42 | 100.0 | 72 | 2 | I79343 | interferon alpha T |
| 2 | 42 | 100.0 | 167 | 2 | D25843 | interferon alpha-G |
| 3 | 42 | 100.0 | 167 | 2 | E25843 | interferon alpha-F |
| 4 | 42 | 100.0 | 176 | 2 | I56314 | interferon-alpha - |
| 5 | 42 | 100.0 | 181 | 2 | I56313 | interferon alpha 2 |
| 6 | 42 | 100.0 | 189 | 1 | IVHU4B | interferon alpha-I |
| 7 | 42 | 100.0 | 189 | 1 | IVHUA1 | interferon alpha-1 |
| 8 | 42 | 100.0 | 189 | 1 | IVHUA7 | interferon alpha-5 |
| 9 | 42 | 100.0 | 189 | 1 | IVHUA9 | interferon alpha-1 |
| 10 | 42 | 100.0 | 189 | 1 | IVHUF | interferon alpha-I |
| 11 | 42 | 100.0 | 189 | 1 | IVHUI6 | interferon alpha-I |
| 12 | 42 | 100.0 | 189 | 2 | I51970 | interferon precurs |
| 13 | 42 | 100.0 | 189 | 2 | I84464 | interferon-alpha-F |
| 14 | 42 | 100.0 | 189 | 2 | I53102 | interferon-alpha-J |
| 15 | 42 | 100.0 | 189 | 2 | I52347 | interferon alpha-M |
| 16 | 36 | 85.7 | 165 | 2 | I78570 | alpha 2 interferon |
| 17 | 36 | 85.7 | 167 | 2 | F25843 | interferon alpha-J |
| 18 | 36 | 85.7 | 170 | 2 | A48772 | interferon, atypic |
| 19 | 36 | 85.7 | 184 | 1 | IVHOA1 | interferon alpha-I |
| 20 | 36 | 85.7 | 184 | 1 | IVHOA2 | interferon alpha-I |
| 21 | 36 | 85.7 | 184 | 1 | IVHOA3 | interferon alpha-I |
| 22 | 36 | 85.7 | 184 | 1 | IVHOA4 | interferon alpha-I |
| 23 | 36 | 85.7 | 188 | 1 | IVHUA2 | interferon alpha-2 |
| 24 | 36 | 85.7 | 189 | 1 | IVHU14 | interferon alpha-I |
| 25 | 36 | 85.7 | 189 | 1 | IVHUA0 | interferon alpha-7 |
| 26 | 36 | 85.7 | 194 | 2 | JS0664 | interferon precurs |
| 27 | 36 | 85.7 | 730 | 2 | H86295 | hypothetical prote |
| 28 | 35 | 83.3 | 162 | 2 | C25843 | interferon alpha-B |
| 29 | 35 | 83.3 | 189 | 1 | IVHUA4 | interferon alpha-4 |
| 30 | 35 | 83.3 | 189 | 1 | IVHUI8 | interferon alpha-I |
| 31 | 35 | 83.3 | 195 | 1 | IVHO21 | interferon alpha-I |
| 32 | 33 | 78.6 | 110 | 2 | F85431 | hypothetical prote |
| 33 | 33 | 78.6 | 189 | 1 | IVHUA5 | interferon alpha-5 |
| 34 | 33 | 78.6 | 217 | 2 | B91205 | hypothetical prote |
| 35 | 33 | 78.6 | 221 | 2 | D86051 | hypothetical prote |
| 36 | 32 | 76.2 | 114 | 2 | S69147 | immunomodulatory p |
| 37 | 32 | 76.2 | 414 | 2 | D96524 | protein T1N15.3 [i |
| 38 | 32 | 76.2 | 573 | 2 | T27578 | hypothetical prote |
| 39 | 32 | 76.2 | 1528 | 2 | T37308 | ATPase homolog - C |
| 40 | 31 | 73.8 | 112 | 2 | C90559 | hypothetical prote |
| 41 | 31 | 73.8 | 189 | 1 | IVMSA1 | interferon alpha-I |
| 42 | 31 | 73.8 | 189 | 1 | IVMSA5 | interferon alpha-I |
| 43 | 31 | 73.8 | 189 | 1 | IVMSA6 | interferon alpha-I |
| 44 | 31 | 73.8 | 189 | 2 | S23709 | interferon alpha-1 |
| 45 | 31 | 73.8 | 189 | 2 | I49773 | murine interferon |

ALIGNMENTS

RESULT 1
I79343
interferon alpha T - human (fragment)
C;Species: Homo sapiens (man)
C;Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999
C;Accession: I79343
R;Lund, B.; Edlund, T.; Lindenmaier, W.; Ny, T.; Collins, J.; Lundgren, E.; von Gabain, A
Proc. Natl. Acad. Sci. U.S.A. 81, 2435-2439, 1984
A;Title: Novel cluster of alpha-interferon gene sequences in a placental cosmid DNA libra
A;Reference number: I58999; MUID:84194022; PMID:6326127
A;Accession: I79343
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-72 <RES>
A;Cross-references: GB:K01461; NID:g184575; PIDN:AAA58685.1; PID:g184579
C;Superfamily: interferon alpha

Query Match 100.0%; Score 42; DB 2; Length 72;
Best Local Similarity 100.0%; Pred. No. 0.11;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 LTEKKYSP 8
||||||||
Db 65 LTEKKYSP 72

RESULT 2
D25843
interferon alpha-G - human
N;Alternate names: human leukocyte interferon (IFN)
C;Species: Homo sapiens (man)
C;Date: 16-Aug-1988 #sequence_revision 16-Aug-1988 #text_change 15-Jun-1996
C;Accession: D25843
R;Ohara, O.; Teraoka, H.
FEBS Lett. 211, 78-82, 1987
A;Title: Anomalous behavior of human leukocyte interferon subtypes on polyacrylamide gel
A;Reference number: A91374; MUID:87105954; PMID:3803589
A;Accession: D25843
A;Status: nucleic acid sequence not shown; not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 1-167 <OHA>
C;Superfamily: interferon alpha

Query Match 100.0%; Score 42; DB 2; Length 167;
Best Local Similarity 100.0%; Pred. No. 0.27;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 LTEKKYSP 8
||||||||
Db 132 LTEKKYSP 139

RESULT 3
E25843
interferon alpha-F - human
N;Alternate names: human leukocyte interferon (IFN)
C;Species: Homo sapiens (man)
C;Date: 16-Aug-1988 #sequence_revision 16-Aug-1988 #text_change 09-Jul-2004
C;Accession: E25843
R;Ohara, O.; Teraoka, H.
FEBS Lett. 211, 78-82, 1987
A;Title: Anomalous behavior of human leukocyte interferon subtypes on polyacrylamide gel
A;Reference number: A91374; MUID:87105954; PMID:3803589
A;Accession: E25843
A;Status: nucleic acid sequence not shown; not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 1-167 <OHA>
A;Cross-references: UNIPROT:Q14608
C;Superfamily: interferon alpha

Query Match 100.0%; Score 42; DB 2; Length 167;
Best Local Similarity 100.0%; Pred. No. 0.27;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 LTEKKYSP 8
||||||||
Db 132 LTEKKYSP 139

RESULT 4
I56314
interferon-alpha - human (fragment)
C;Species: Homo sapiens (man)
C;Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 09-Jul-2004
C;Accession: I56314
R;Lund, B.; von Gabain, A.; Edlund, T.; Ny, T.; Lundgren, E.
J. Interferon Res. 5, 229-238, 1985
A;Title: Differential expression of interferon genes in a substrain of Namalwa cells.
A;Reference number: I56314; MUID:85235859; PMID:4008999
A;Accession: I56314
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-176 <RES>
A;Cross-references: UNIPROT:P01571; GB:M71246; NID:g184572; PIDN:AAA52713.1; PID:g184573
C;Genetics:
A;Gene: IFNA
C;Superfamily: interferon alpha

Query Match 100.0%; Score 42; DB 2; Length 176;
Best Local Similarity 100.0%; Pred. No. 0.29;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 LTEKKYSP 8
||||||||
Db 141 LTEKKYSP 148

RESULT 5
I56313
interferon alpha 21 - human
C;Species: Homo sapiens (man)
C;Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 09-Jul-2004
C;Accession: I56313
R;Gren, E.; Berzin, V.M.; Jansone, I.; Tsimanis, A.; Vishnevsky, Y.; Apsalons, U.
J. Interferon Res. 4, 609-617, 1984
A;Title: Novel human leukocyte interferon subtype and structural comparison of alpha int
A;Reference number: I56313; MUID:85056523; PMID:6548765
A;Accession: I56313
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-181 <RES>
A;Cross-references: UNIPROT:Q14608; GB:M28586; NID:g184636; PIDN:AAA36041.1; PID:g306912
C;Genetics:
A;Gene: GDB:IFNA21
A;Cross-references: GDB:136360; OMIM:147584
A;Map position: 9p22-9p22
C;Superfamily: interferon alpha

Query Match 100.0%; Score 42; DB 2; Length 181;
Best Local Similarity 100.0%; Pred. No. 0.3;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 LTEKKYSP 8
||||||||
Db 146 LTEKKYSP 153

RESULT 6
IVHU4B
interferon alpha-I-4b precursor - human
N;Alternate names: HuIFN-alpha-I-4b; type I interferon
C;Species: Homo sapiens (man)
C;Date: 28-Dec-1987 #sequence_revision 28-Dec-1987 #text_change 09-Jul-2004
C;Accession: E23753
R;Henco, K.; Brosius, J.; Fujisawa, A.; Fujisawa, J.I.; Haynes, J.R.; Hochstadt, J.; Kov
J. Mol. Biol. 185, 227-260, 1985
A;Title: Structural relationship of human interferon alpha genes and pseudogenes.
A;Reference number: A92916; MUID:86037205; PMID:4057246
A;Accession: E23753
A;Molecule type: DNA
A;Residues: 1-189 <HEN>
A;Cross-references: UNIPROT:P05014; GB:X02955; NID:g32656; PIDN:CAA26701.1; PID:g758078
C;Genetics:
A;Gene: GDB:IFN1@
A;Cross-references: GDB:119328; OMIM:147660
A;Map position: 9p22-9p22
C;Superfamily: interferon alpha
C;Keywords: antiviral
F;1-23/Domain: signal sequence #status predicted <SIG>
F;24-189/Product: interferon alpha-I-4b #status predicted <MAT>
F;24-122,52-162/Disulfide bonds: #status predicted

Query Match 100.0%; Score 42; DB 1; Length 189;
Best Local Similarity 100.0%; Pred. No. 0.31;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 LTEKKYSP 8
||||||||
Db 154 LTEKKYSP 161

RESULT 7
IVHUA1
interferon alpha-1 precursor - human
N;Alternate names: interferon alpha-13; interferon alpha-D; interferon alpha-I-1
C;Species: Homo sapiens (man)
C;Date: 22-May-1981 #sequence_revision 01-Sep-1981 #text_change 09-Jul-2004
C;Accession: C23285; A91467; A93226; A93249; I58213; S43715; S41196; A01826
R;Capon, D.J.; Shepard, H.M.; Goeddel, D.V.
Mol. Cell. Biol. 5, 768-779, 1985
A;Title: Two distinct families of human and bovine interferon-alpha genes are coordinate
A;Reference number: A93070; MUID:85187974; PMID:2985969
A;Accession: C23285
A;Molecule type: DNA
A;Residues: 1-189 <CAP>
A;Cross-references: UNIPROT:P01562
R;Mantei, N.; Schwarzstein, M.; Streuli, M.; Panem, S.; Nagata, S.; Weissmann, C.
Gene 10, 1-10, 1980
A;Title: The nucleotide sequence of a cloned human leukocyte inteferon cDNA.
A;Reference number: A91467; MUID:81005094; PMID:6157600
A;Accession: A91467
A;Molecule type: mRNA
A;Residues: 1-189 <MAN>
A;Cross-references: GB:V00537; NID:g32711; PIDN:CAA23798.1; PID:g32712
R;Taniguchi, T.; Mantei, N.; Schwarzstein, M.; Nagata, S.; Muramatsu, M.; Weissmann, C.
Nature 285, 547-549, 1980
A;Title: Human leukocyte and fibroblast interferons are structurally related.
A;Reference number: A93226; MUID:80254543; PMID:6157095

```
A;Accession: A93226
A;Molecule type: mRNA
A;Residues: 1-189 <TAN>
R;Goeddel, D.V.; Leung, D.W.; Dull, T.J.; Gross, M.; Lawn, R.M.; McCandliss, R.; Seeburg
Nature 290, 20-26, 1981
A;Title: The structure of eight distinct cloned human leukocyte interferon cDNAs.
A;Reference number: A93249; MUID:81148795; PMID:6163083
A;Accession: A93249
A;Molecule type: mRNA
A;Residues: 1-136,'V',138-189 <GOE>
A;Cross-references: GB:V00538; NID:g32713; PIDN:CAA23799.1; PID:g32714
A;Note: eight classes of interferon alpha clones were identified; this sequence is deriv
R;Weber, H.; Weissmann, C.
Nucleic Acids Res. 11, 5661-5669, 1983
A;Title: Formation of genes coding for hybrid proteins by recombination between related,
A;Reference number: I58213; MUID:83299241; PMID:6310510
A;Accession: I58213
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 24-189 <RES>
A;Cross-references: GB:M29884; NID:g184583; PIDN:AAA52714.1; PID:g386794
R;Henco, K.; Brosius, J.; Fujisawa, A.; Fujisawa, J.I.; Haynes, J.R.; Hochstadt, J.; Kov
J. Mol. Biol. 185, 227-260, 1985
A;Title: Structural relationship of human interferon alpha genes and pseudogenes.
A;Reference number: A92916; MUID:86037205; PMID:4057246
A;Accession: S43715
A;Molecule type: DNA
A;Residues: 1-189 <HEN>
A;Cross-references: EMBL:X75934
R;Rostoks, N.
submitted to the EMBL Data Library, December 1993
A;Reference number: S41196
A;Accession: S41196
A;Molecule type: DNA
A;Residues: 1-9,'A',11-189 <ROS>
A;Cross-references: EMBL:X75934; NID:g439666; PIDN:CAA53538.1; PID:g439667
C;Genetics:
A;Gene: GDB:IFNA1
A;Cross-references: GDB:136353; OMIM:147660
A;Map position: 9p22-9p22
C;Superfamily: interferon alpha
C;Keywords: antiviral; cytokine; leukocyte
F;1-23/Domain: signal sequence #status predicted <SIG>
F;24-189/Product: interferon alpha-1 #status predicted <MAT>
F;24-122,52-162/Disulfide bonds: #status predicted

  Query Match             100.0%;  Score 42;  DB 1;  Length 189;
  Best Local Similarity   100.0%;  Pred. No. 0.31;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        154 LTEKKYSP 161


RESULT 8
IVHUA7
interferon alpha-5 precursor - human
N;Alternate names: interferon alpha-G
C;Species: Homo sapiens (man)
C;Date: 01-Sep-1981 #sequence_revision 29-Jan-1999 #text_change 09-Jul-2004
C;Accession: S43716; A01833
R;Henco, K.; Brosius, J.; Fujisawa, A.; Fujisawa, J.I.; Haynes, J.R.; Hochstadt, J.; Kov
J. Mol. Biol. 185, 227-260, 1985
A;Title: Structural relationship of human interferon alpha genes and pseudogenes.
A;Reference number: A92916; MUID:86037205; PMID:4057246
A;Accession: S43716
A;Molecule type: DNA
A;Residues: 1-189 <HEN>
A;Cross-references: UNIPROT:P01569; EMBL:X02956; NID:g32659; PIDN:CAA26702.1; PID:g75807
R;Goeddel, D.V.; Leung, D.W.; Dull, T.J.; Gross, M.; Lawn, R.M.; McCandliss, R.; Seeburg
Nature 290, 20-26, 1981
A;Title: The structure of eight distinct cloned human leukocyte interferon cDNAs.
A;Reference number: A93249; MUID:81148795; PMID:6163083
A;Accession: A01833
A;Molecule type: mRNA
A;Residues: 57-189 <GOE>
A;Cross-references: GB:V00541; GB:J00213; NID:g32718; PIDN:CAA23802.1; PID:g32719
A;Note: eight classes of interferon alpha clones were identified; this sequence is derive
C;Genetics:
A;Gene: GDB:IFNA5
A;Cross-references: GDB:136362; OMIM:147565
A;Map position: 9p22-9p22
C;Superfamily: interferon alpha
C;Keywords: antiviral; cytokine; leukocyte
F;1-23/Domain: signal sequence #status predicted <SIG>
F;24-189/Product: interferon alpha-5 #status predicted <MAT>

  Query Match             100.0%;  Score 42;  DB 1;  Length 189;
  Best Local Similarity   100.0%;  Pred. No. 0.31;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        154 LTEKKYSP 161


RESULT 9
IVHUA9
interferon alpha-17 precursor - human
N;Alternate names: interferon alpha-9; interferon alpha-I'
C;Species: Homo sapiens (man)
C;Date: 01-Sep-1981 #sequence_revision 01-Sep-1981 #text_change 09-Jul-2004
C;Accession: A01835; A22255; C42753
R;Lawn, R.M.; Adelman, J.; Dull, T.J.; Gross, M.; Goeddel, D.; Ullrich, A.
Science 212, 1159-1162, 1981
A;Title: DNA sequence of two closely linked human leukocyte interferon genes.
A;Reference number: A94255; MUID:81201124; PMID:6165082
A;Accession: A01835
A;Molecule type: DNA
A;Residues: 1-189 <LAW>
A;Cross-references: UNIPROT:P01571; GB:J00216; GB:V00532; NID:g32633; PIDN:CAA23793.1; PI
R;Mizoguchi, J.; Pitha, P.M.; Raj, N.B.K.
DNA 4, 221-232, 1985
A;Title: Efficient expression in Escherichia coli of two species of human interferon-alph
A;Reference number: A22255; MUID:85229953; PMID:3891272
A;Accession: A22255
A;Molecule type: mRNA
A;Residues: 1-56,'H',58-189 <MIZ>
A;Cross-references: GB:M11026; NID:g184612; PIDN:AAA52725.1; PID:g306908
R;Zoon, K.C.; Miller, D.; Bekisz, J.; zur Nedden, D.; Enterline, J.C.; Nguyen, N.Y.; Hu,
J. Biol. Chem. 267, 15210-15216, 1992
A;Title: Purification and characterization of multiple components of human lymphoblastoid
A;Reference number: A42753; MUID:92340576; PMID:1634550
A;Accession: C42753
A;Molecule type: protein
A;Residues: 'X',25-50,'XX',53-56 <ZOO>
C;Genetics:
A;Gene: GDB:IFNA17
A;Cross-references: GDB:136358; OMIM:147583
A;Map position: 9p22-9p22
C;Superfamily: interferon alpha
C;Keywords: leukocyte
F;1-23/Domain: signal sequence #status predicted <SIG>
F;24-189/Product: interferon alpha-17 #status predicted <MAT>
F;24-122,52-162/Disulfide bonds: #status predicted

  Query Match             100.0%;  Score 42;  DB 1;  Length 189;
  Best Local Similarity   100.0%;  Pred. No. 0.31;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        154 LTEKKYSP 161
```

```
RESULT 10
IVHUF
interferon alpha-I-F precursor - human
N;Alternate names: HuIFN-alpha-I-F; LeIF F; type I interferon
C;Species: Homo sapiens (man)
C;Date: 01-Sep-1981 #sequence_revision 01-Sep-1981 #text_change 09-Jul-2004
C;Accession: A01832
R;Goeddel, D.V.; Leung, D.W.; Dull, T.J.; Gross, M.; Lawn, R.M.; McCandliss, R.; Seeburg
Nature 290, 20-26, 1981
A;Title: The structure of eight distinct cloned human leukocyte interferon cDNAs.
A;Reference number: A93249; MUID:81148795; PMID:6163083
A;Accession: A01832
A;Molecule type: mRNA
A;Residues: 1-189 <GOE>
A;Cross-references: UNIPROT:P01568; GB:V00540; GB:J00212; NID:g32716; PIDN:CAA23801.1; P
A;Note: eight classes of interferon alpha clones were identified; this sequence is deriv
C;Genetics:
A;Gene: GDB:IFN1@
A;Cross-references: GDB:119328; OMIM:147660
A;Map position: 9p22-9p22
C;Superfamily: interferon alpha
C;Keywords: antiviral
F;1-23/Domain: signal sequence #status predicted <SIG>
F;24-189/Product: interferon alpha-I-F #status predicted <MAT>
F;24-122,52-162/Disulfide bonds: #status predicted

  Query Match             100.0%;  Score 42;  DB 1;  Length 189;
  Best Local Similarity   100.0%;  Pred. No. 0.31;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        154 LTEKKYSP 161


RESULT 11
IVHUI6
interferon alpha-I-6 precursor - human
N;Alternate names: HuIFN-alpha-I-6; LeIF K; type I interferon
C;Species: Homo sapiens (man)
C;Date: 28-Dec-1987 #sequence_revision 28-Dec-1987 #text_change 09-Jul-2004
C;Accession: A23753
R;Henco, K.; Brosius, J.; Fujisawa, A.; Fujisawa, J.I.; Haynes, J.R.; Hochstadt, J.; Kov
J. Mol. Biol. 185, 227-260, 1985
A;Title: Structural relationship of human interferon alpha genes and pseudogenes.
A;Reference number: A92916; MUID:86037205; PMID:4057246
A;Accession: A23753
A;Molecule type: DNA
A;Residues: 1-189 <HEN>
A;Cross-references: UNIPROT:P05013; GB:X02958; NID:g32662; PIDN:CAA26704.1; PID:g758080
C;Genetics:
A;Gene: GDB:IFNA6
A;Cross-references: GDB:136363; OMIM:147566
A;Map position: 9p22-9p22
C;Superfamily: interferon alpha
C;Keywords: antiviral
F;1-23/Domain: signal sequence #status predicted <SIG>
F;24-189/Product: interferon alpha-I-6 #status predicted <MAT>
F;24-122,52-162/Disulfide bonds: #status predicted

  Query Match             100.0%;  Score 42;  DB 1;  Length 189;
  Best Local Similarity   100.0%;  Pred. No. 0.31;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        154 LTEKKYSP 161


RESULT 12
I51970
interferon precursor - human
C;Species: Homo sapiens (man)
C;Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 16-Jul-1999
C;Accession: I51970
R;Saveliev, V.I.; Zlochevsky, M.L.; Sorokin, A.V.; Naroditskaya, V.A.; Bolotin, A.P.; Der
Antibiot. Med. Biotekhnol. 31, 592-596, 1986
A;Title: [Cloning and the determination of the nucleotide sequences in 2 genes of human I
A;Reference number: I51970; MUID:87024453; PMID:3767336
A;Accession: I51970
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-189 <RES>
A;Cross-references: GB:M38289; NID:g186407; PIDN:AAA59165.1; PID:g186408
C;Genetics:
A;Gene: IFNA
C;Superfamily: interferon alpha

  Query Match             100.0%;  Score 42;  DB 2;  Length 189;
  Best Local Similarity   100.0%;  Pred. No. 0.31;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        154 LTEKKYSP 161


RESULT 13
I84464
interferon-alpha-F - human
C;Species: Homo sapiens (man)
C;Date: 02-Aug-1996 #sequence_revision 02-Aug-1996 #text_change 09-Jul-2004
C;Accession: I84464; I37583
R;Gren, E.Y.; Berzin, V.M.; Tsimanis, A.Y.; Apsalon, U.R.; Vishnevskii, Y.I.; Yansone, I
.A.; Lozha, V.P.; Kavsan, V.M.; Efimov, V.A.; Sverdlov, E.D.
Dokl. Biochem. 269, 91-95, 1983
A;Title: A new type of leukocytic interferon.
A;Reference number: I37583
A;Accession: I84464
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-189 <RES>
A;Cross-references: UNIPROT:P01568; GB:M12350; NID:g184598; PIDN:AAA52718.1; PID:g306906
A;Accession: I37583
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-189 <RE2>
A;Cross-references: EMBL:X00145; NID:g32724; PIDN:CAA24980.1; PID:g32725
C;Genetics:
A;Gene: IFNA
C;Superfamily: interferon alpha

  Query Match             100.0%;  Score 42;  DB 2;  Length 189;
  Best Local Similarity   100.0%;  Pred. No. 0.31;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        154 LTEKKYSP 161


RESULT 14
I53102
interferon-alpha-J1 - human
C;Species: Homo sapiens (man)
C;Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 09-Jul-2004
C;Accession: I53102
R;Cohen, S.; Velan, B.; Grosfeld, H.; Shalita, Z.; Leitner, M.; Shafferman, A.
Dev. Biol. Stand. 60, 111-122, 1985
A;Title: Cloning, expression and biological activity of a new variant of human interferor
A;Reference number: I53102; MUID:86005847; PMID:2995168
A;Accession: I53102
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-189 <RES>
A;Cross-references: UNIPROT:P01567; GB:M34913; NID:g184614; PIDN:AAA36039.1; PID:g184615
```

C;Superfamily: interferon alpha

Query Match 100.0%; Score 42; DB 2; Length 189;
Best Local Similarity 100.0%; Pred. No. 0.31;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 LTEKKYSP 8
||||||||
Db 154 LTEKKYSP 161

RESULT 15
I52347
interferon alpha-M1 precursor - human
C;Species: Homo sapiens (man)
C;Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 09-Jul-2004
C;Accession: I52347
R;Linnane, A.W.; Beilharz, M.W.; McMullen, G.L.; Macreadie, I.G.; Murphy, M.; Nisbet, I.
Biochem. Int. 8, 725-732, 1984
A;Title: Nucleotide sequence and expression in E. coli of a human interferon-alpha gene
A;Reference number: I52347; MUID:84307815; PMID:6089830
A;Accession: I52347
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-189 <RES>
A;Cross-references: UNIPROT:P05014; GB:M27318; NID:g184617; PIDN:AAA52726.1; PID:g306909
C;Genetics:
A;Gene: IFNA
C;Superfamily: interferon alpha

Query Match 100.0%; Score 42; DB 2; Length 189;
Best Local Similarity 100.0%; Pred. No. 0.31;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 LTEKKYSP 8
||||||||
Db 154 LTEKKYSP 161

Search completed: May 19, 2005, 12:55:51
Job time : 40 secs

This Page Blank (uspto)

GenCore version 5.1.6


OM protein - protein search, using sw model

Run on: May 19, 2005, 12:37:26 ; Search time 175 Seconds
(without alignments)
23.409 Million cell updates/sec

Title: US-09-424-080B-1
Perfect score: 42
Sequence: 1 LTEKKYSP 8

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1612378 seqs, 512079187 residues

Total number of hits satisfying chosen parameters: 1612378

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : UniProt_03:*
1: uniprot_sprot:*
2: uniprot_trembl:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | % Query Match | Length | DB | ID | Description |
|---|---|---|---|---|---|---|
| 1 | 42 | 100.0 | 73 | 2 | Q8HYG5 | Q8hyg5 macropus eu |
| 2 | 42 | 100.0 | 73 | 2 | Q8HYG8 | Q8hyg8 macropus eu |
| 3 | 42 | 100.0 | 166 | 2 | Q8WZ68 | Q8wz68 homo sapien |
| 4 | 42 | 100.0 | 166 | 2 | Q9UMJ3 | Q9umj3 homo sapien |
| 5 | 42 | 100.0 | 181 | 2 | Q14608 | Q14608 homo sapien |
| 6 | 42 | 100.0 | 189 | 1 | INA1_HUMAN | P01562 homo sapien |
| 7 | 42 | 100.0 | 189 | 1 | INA4_HUMAN | P05014 homo sapien |
| 8 | 42 | 100.0 | 189 | 1 | INA5_HUMAN | P01569 homo sapien |
| 9 | 42 | 100.0 | 189 | 1 | INA6_HUMAN | P05013 homo sapien |
| 10 | 42 | 100.0 | 189 | 1 | INAG_HUMAN | P01571 homo sapien |
| 11 | 42 | 100.0 | 189 | 1 | INAK_HUMAN | P01568 homo sapien |
| 12 | 42 | 100.0 | 189 | 2 | Q14605 | Q14605 homo sapien |
| 13 | 38 | 90.5 | 123 | 2 | Q8R3L0 | Q8r310 mus musculu |
| 14 | 38 | 90.5 | 1104 | 2 | Q8I2S2 | Q8i2s2 plasmodium |
| 15 | 36 | 85.7 | 73 | 2 | Q8HYG2 | Q8hyg2 macropus eu |
| 16 | 36 | 85.7 | 73 | 2 | Q8HYG9 | Q8hyg9 macropus eu |
| 17 | 36 | 85.7 | 108 | 2 | Q9N1U6 | Q9n1u6 equus cabal |
| 18 | 36 | 85.7 | 154 | 2 | Q6QNB6 | Q6qnb6 homo sapien |
| 19 | 36 | 85.7 | 166 | 2 | Q86UP4 | Q86up4 homo sapien |
| 20 | 36 | 85.7 | 170 | 2 | Q29114 | Q29114 sus scrofa |
| 21 | 36 | 85.7 | 170 | 2 | Q29115 | Q29115 sus scrofa |
| 22 | 36 | 85.7 | 184 | 1 | INA1_HORSE | P05003 equus cabal |
| 23 | 36 | 85.7 | 184 | 1 | INA2_HORSE | P05004 equus cabal |
| 24 | 36 | 85.7 | 184 | 1 | INA3_HORSE | P05005 equus cabal |
| 25 | 36 | 85.7 | 184 | 1 | INA4_HORSE | P05006 equus cabal |
| 26 | 36 | 85.7 | 188 | 1 | INA2_HUMAN | P01563 homo sapien |
| 27 | 36 | 85.7 | 188 | 2 | Q863I5 | Q863i5 felis silve |
| 28 | 36 | 85.7 | 188 | 2 | Q863I6 | Q863i6 felis silve |
| 29 | 36 | 85.7 | 189 | 1 | INA7_HUMAN | P01567 homo sapien |
| 30 | 36 | 85.7 | 189 | 1 | INAD_HUMAN | P01570 homo sapien |
| 31 | 36 | 85.7 | 189 | 2 | Q8MIL3 | Q8mil3 felis silve |
| 32 | 36 | 85.7 | 189 | 2 | Q8MIL4 | Q8mil4 felis silve |
| 33 | 36 | 85.7 | 189 | 2 | Q8MIL5 | Q8mil5 felis silve |
| 34 | 36 | 85.7 | 189 | 2 | Q8MIL7 | Q8mil7 felis silve |
| 35 | 36 | 85.7 | 189 | 2 | Q863I7 | Q863i7 felis silve |
| 36 | 36 | 85.7 | 189 | 2 | Q863I8 | Q863i8 felis silve |
| 37 | 36 | 85.7 | 189 | 2 | Q863I9 | Q863i9 felis silve |
| 38 | 36 | 85.7 | 189 | 2 | Q863J0 | Q863j0 felis silve |
| 39 | 36 | 85.7 | 194 | 1 | INA_FELCA | P35849 felis silve |
| 40 | 36 | 85.7 | 194 | 2 | Q8MIL6 | Q8mil6 felis silve |
| 41 | 36 | 85.7 | 194 | 2 | Q863J1 | Q863j1 felis silve |
| 42 | 36 | 85.7 | 417 | 2 | Q96N00 | Q96n00 homo sapien |
| 43 | 36 | 85.7 | 730 | 2 | Q9S9M5 | Q9s9m5 arabidopsis |
| 44 | 36 | 85.7 | 831 | 2 | Q96MT3 | Q96mt3 homo sapien |
| 45 | 36 | 85.7 | 831 | 2 | Q71QF8 | Q71qf8 homo sapien |

ALIGNMENTS

RESULT 1
Q8HYG5
ID Q8HYG5 PRELIMINARY; PRT; 73 AA.
AC Q8HYG5;
DT 01-MAR-2003 (TrEMBLrel. 23, Created)
DT 01-MAR-2003 (TrEMBLrel. 23, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE Type I interferon (Fragment).
OS Macropus eugenii (Tammar wallaby).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Metatheria; Diprotodontia; Macropodidae; Macropus.
OX NCBI_TaxID=9315;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=22583464; PubMed=12697149; DOI=10.1016/S1043-4666(03)00029-2;
RA Harrison G.A., Young L.J., Watson C.M., Miska K.B., Miller R.D.,
RA Deane E.M.;
RT "A survey of type I interferons from a marsupial and monotreme:
RT implications for the evolution of the type I interferon gene family in
RT mammals.";
RL Cytokine 21:105-119(2003).
CC -!- SIMILARITY: Belongs to the alpha/beta interferon family.
DR EMBL; AF522901; AAO14976.1; -.
DR HSSP; P01563; 1ITF.
DR GO; GO:0005576; C:extracellular; IEA.
DR GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. . .; IEA.
DR GO; GO:0006952; P:defense response; IEA.
DR InterPro; IPR009079; 4_helix_cytokine.
DR InterPro; IPR000471; Interferon_abd.
DR Pfam; PF00143; Interferon; 1.
DR ProDom; PD000550; Interferon_abd; 1.
DR SMART; SM00076; IFabd; 1.
KW Antiviral; Cytokine.
FT NON_TER 1 1
FT NON_TER 73 73
SQ SEQUENCE 73 AA; 8543 MW; 644EC138E1ACF36C CRC64;

Query Match 100.0%; Score 42; DB 2; Length 73;
Best Local Similarity 100.0%; Pred. No. 0.87;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 LTEKKYSP 8
||||||||
Db 66 LTEKKYSP 73

RESULT 2
Q8HYG8
ID Q8HYG8 PRELIMINARY; PRT; 73 AA.
AC Q8HYG8;
DT 01-MAR-2003 (TrEMBLrel. 23, Created)
DT 01-MAR-2003 (TrEMBLrel. 23, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE Type I interferon (Fragment).

```
OS   Macropus eugenii (Tammar wallaby).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Metatheria; Diprotodontia; Macropodidae; Macropus.
OX   NCBI_TaxID=9315;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=22583464; PubMed=12697149; DOI=10.1016/S1043-4666(03)00029-2;
RA   Harrison G.A., Young L.J., Watson C.M., Miska K.B., Miller R.D.,
RA   Deane E.M.;
RT   "A survey of type I interferons from a marsupial and monotreme:
RT   implications for the evolution of the type I interferon gene family in
RT   mammals.";
RL   Cytokine 21:105-119(2003).
CC   -!- SIMILARITY: Belongs to the alpha/beta interferon family.
DR   EMBL; AF522897; AAO14973.1; -.
DR   HSSP; P01563; 1ITF.
DR   GO; GO:0005576; C:extracellular; IEA.
DR   GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. . .; IEA.
DR   GO; GO:0006952; P:defense response; IEA.
DR   InterPro; IPR009079; 4_helix_cytokine.
DR   InterPro; IPR000471; Interferon_abd.
DR   Pfam; PF00143; Interferon; 1.
DR   ProDom; PD000550; Interferon_abd; 1.
DR   SMART; SM00076; IFabd; 1.
KW   Antiviral; Cytokine.
FT   NON_TER       1      1
FT   NON_TER      73     73
SQ   SEQUENCE   73 AA;  8529 MW;  7995C138E5B8E368 CRC64;

  Query Match             100.0%;  Score 42;  DB 2;  Length 73;
  Best Local Similarity   100.0%;  Pred. No. 0.87;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db         66 LTEKKYSP 73


RESULT 3
Q8WZ68
ID   Q8WZ68      PRELIMINARY;      PRT;   166 AA.
AC   Q8WZ68;
DT   01-MAR-2002 (TrEMBLrel. 20, Created)
DT   01-MAR-2002 (TrEMBLrel. 20, Last sequence update)
DT   01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE   Interferon alpha 1b (Fragment).
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Chen H.H., Yu X.B.;
RL   Submitted (OCT-2001) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: Belongs to the alpha/beta interferon family.
DR   EMBL; AF439447; AAL35223.1; -.
DR   PIR; H42753; H42753.
DR   HSSP; P01563; 1ITF.
DR   GO; GO:0005576; C:extracellular; IEA.
DR   GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. . .; IEA.
DR   GO; GO:0006952; P:defense response; IEA.
DR   Pfam; PF00143; Interferon; 1.
DR   PRINTS; PR00266; INTERFERONAB.
DR   ProDom; PD000550; Interferon_abd; 1.
DR   SMART; SM00076; IFabd; 1.
DR   PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW   Antiviral; Cytokine.
FT   NON_TER       1      1
SQ   SEQUENCE   166 AA;  19338 MW;  41589C56634177B8 CRC64;

  Query Match             100.0%;  Score 42;  DB 2;  Length 166;
  Best Local Similarity   100.0%;  Pred. No. 2;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        131 LTEKKYSP 138


RESULT 4
Q9UMJ3
ID   Q9UMJ3      PRELIMINARY;      PRT;   166 AA.
AC   Q9UMJ3;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE   IFNA protein (Fragment).
GN   Name=IFNA;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=83299241; PubMed=6310510;
RA   Weber H., Weissmann C.;
RT   "Formation of genes coding for hybrid proteins by recombination
RT   between related, cloned genes in E. coli.";
RL   Nucleic Acids Res. 11:5661-5669(1983).
CC   -!- SIMILARITY: Belongs to the alpha/beta interferon family.
DR   EMBL; M29884; AAA52714.1; -.
DR   PIR; H42753; H42753.
DR   HSSP; P01563; 1ITF.
DR   GO; GO:0005576; C:extracellular; IEA.
DR   GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. . .; IEA.
DR   GO; GO:0006952; P:defense response; IEA.
DR   InterPro; IPR009079; 4_helix_cytokine.
DR   InterPro; IPR000471; Interferon_abd.
DR   Pfam; PF00143; Interferon; 1.
DR   PRINTS; PR00266; INTERFERONAB.
DR   ProDom; PD000550; Interferon_abd; 1.
DR   SMART; SM00076; IFabd; 1.
DR   PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW   Antiviral; Cytokine.
FT   NON_TER       1      1
SQ   SEQUENCE   166 AA;  19386 MW;  4152EA2A78361BB8 CRC64;

  Query Match             100.0%;  Score 42;  DB 2;  Length 166;
  Best Local Similarity   100.0%;  Pred. No. 2;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        131 LTEKKYSP 138


RESULT 5
Q14608
ID   Q14608      PRELIMINARY;      PRT;   181 AA.
AC   Q14608;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE   Leukocyte interferon-alpha.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=85056523; PubMed=6548765;
RA   Gren E., Berzin V.M., Jansone I., Tsimanis A., Vishnevsky Y.,
RA   Apsalons U.;
RT   "Novel human leukocyte interferon subtype and structural comparison of
RT   alpha interferon genes.";
RL   J. Interferon Res. 4:609-617(1984).
```

```
CC   -!- SIMILARITY: Belongs to the alpha/beta interferon family.
DR   EMBL; M28586; AAA36041.1; -.
DR   PIR; E25843; E25843.
DR   PIR; I56313; I56313.
DR   HSSP; P01563; 1ITF.
DR   GO; GO:0005576; C:extracellular; IEA.
DR   GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. . .; IEA.
DR   GO; GO:0006952; P:defense response; IEA.
DR   InterPro; IPR009079; 4_helix_cytokine.
DR   InterPro; IPR000471; Interferon_abd.
DR   Pfam; PF00143; Interferon; 1.
DR   PRINTS; PR00266; INTERFERONAB.
DR   ProDom; PD000550; Interferon_abd; 1.
DR   SMART; SM00076; IFabd; 1.
DR   PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW   Antiviral; Cytokine.
SQ   SEQUENCE   181 AA;  20878 MW;  3DB45120764EBABC CRC64;

  Query Match           100.0%;  Score 42;  DB 2;  Length 181;
  Best Local Similarity  100.0%;  Pred. No. 2.2;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        146 LTEKKYSP 153


RESULT 6
INA1_HUMAN
ID   INA1_HUMAN     STANDARD;      PRT;   189 AA.
AC   P01562;
DT   21-JUL-1986 (Rel. 01, Created)
DT   21-JUL-1986 (Rel. 01, Last sequence update)
DT   05-JUL-2004 (Rel. 44, Last annotation update)
DE   Interferon alpha-1/13 precursor (Interferon alpha-D) (LeIF D).
GN   Name=IFNA1;
GN   and
GN   Name=IFNA13;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=81005094; PubMed=6157600; DOI=10.1016/0378-1119(80)90137-7;
RA   Mantei N., Schwarzstein M., Streuli M., Panem S., Nagata S.,
RA   Weissmann C.;
RT   "The nucleotide sequence of a cloned human leukocyte interferon
RT   cDNA.";
RL   Gene 10:1-10(1980).
RN   [2]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=80254543; PubMed=6157095;
RA   Taniguchi T., Mantei N., Schwarzstein M., Nagata S., Muramatsu M.,
RA   Weissmann C.;
RT   "Human leukocyte and fibroblast interferons are structurally
RT   related.";
RL   Nature 285:547-549(1980).
RN   [3]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=81148795; PubMed=6163083;
RA   Goeddel D.V., Leung D.W., Dull T.J., Gross M., Lawn R.M.,
RA   McCandliss R., Seeburg P.H., Ullrich A., Yelverton E., Gray P.W.;
RT   "The structure of eight distinct cloned human leukocyte interferon
RT   cDNAs.";
RL   Nature 290:20-26(1981).
RN   [4]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=85003592; PubMed=6479148;
RA   Todokoro K., Kioussis D., Weissmann C.;
RT   "Two non-allelic human interferon alpha genes with identical coding
RT   regions.";
RL   EMBO J. 3:1809-1812(1984).
RN   [5]
RP   SEQUENCE OF 24-58.
RX   MEDLINE=98087498; PubMed=9425112;
RA   Nyman T.A., Toeloe H., Parkkinen J., Kalkkinen N.;
RT   "Identification of nine interferon-alpha subtypes produced by Sendai
RT   virus-induced human peripheral blood leucocytes.";
RL   Biochem. J. 329:295-302(1998).
RN   [6]
RP   POLYMORPHISM.
RX   MEDLINE=20485144; PubMed=11032395; DOI=10.1089/10799900050151021;
RA   Hussain M., Ni D., Gill D., Liao M.-J.;
RT   "IFN-alpha-1a gene is the major variant in the North American
RT   population.";
RL   J. Interferon Cytokine Res. 20:763-768(2000).
CC   -!- FUNCTION: Produced by macrophages, IFN-alpha have antiviral
CC       activities. Interferon stimulates the production of two enzymes: a
CC       protein kinase and an oligoadenylate synthetase.
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- POLYMORPHISM: Two forms exist; alpha-1a (shown here) and alpha-1b.
CC   -!- MISCELLANEOUS: Interferons alpha-1 and alpha-13 have identical
CC       protein sequences.
CC   -!- SIMILARITY: Belongs to the alpha/beta interferon family.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; J00210; AAB59403.1; -.
DR   EMBL; V00537; CAA23798.1; -.
DR   EMBL; V00538; CAA23799.1; -.
DR   EMBL; X00803; CAA25381.1; -.
DR   PIR; C23285; IVHUA1.
DR   HSSP; P01563; 1ITF.
DR   Genew; HGNC:5417; IFNA1.
DR   Genew; HGNC:5419; IFNA13.
DR   MIM; 147660; -.
DR   MIM; 147578; -.
DR   GO; GO:0005132; F:interferon-alpha/beta receptor binding; TAS.
DR   InterPro; IPR009079; 4_helix_cytokine.
DR   InterPro; IPR000471; Interferon_abd.
DR   Pfam; PF00143; Interferon; 1.
DR   PRINTS; PR00266; INTERFERONAB.
DR   ProDom; PD000550; Interferon_abd; 1.
DR   PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW   Antiviral; Cytokine; Direct protein sequencing; Multigene family;
KW   Polymorphism; Signal.
FT   SIGNAL        1     23
FT   CHAIN        24    189       Interferon alpha-1/13.
FT   DISULFID     24    122       By similarity.
FT   DISULFID     52    162       By similarity.
FT   VARIANT     137    137       A -> V (in alpha-1B; dbSNP:2230050).
FT                                /FTId=VAR_013000.
SQ   SEQUENCE   189 AA;  21725 MW;  F32F9CB969606B69 CRC64;

  Query Match           100.0%;  Score 42;  DB 1;  Length 189;
  Best Local Similarity  100.0%;  Pred. No. 2.3;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        154 LTEKKYSP 161


RESULT 7
INA4_HUMAN
ID   INA4_HUMAN     STANDARD;      PRT;   189 AA.
AC   P05014; P13358;
DT   13-AUG-1987 (Rel. 05, Created)
DT   13-AUG-1987 (Rel. 05, Last sequence update)
```

```
DT   05-JUL-2004 (Rel. 44, Last annotation update)
DE   Interferon alpha-4 precursor (Interferon alpha-4B) (Interferon alpha-
DE   M1) (Interferon alpha-76).
GN   Name=IFNA4;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=86037205; PubMed=4057246;
RA   Henco K., Brosius J., Fujisawa A., Fujisawa J.-I., Haynes J.R.,
RA   Hochstadt J., Kovacic T., Pasek M., Schamboeck A., Schmid J.,
RA   Todokoro K., Waelchli M., Nagata S., Weissmann C.;
RT   "Structural relationship of human interferon alpha genes and
RT   pseudogenes.";
RL   J. Mol. Biol. 185:227-260(1985).
RN   [2]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=84307815; PubMed=6089830;
RA   Linnane A.W., Beilharz M.W., McMullen G.L., Macreadie I.G., Murphy M.,
RA   Nisbet I.T., Novitski C.E., Woodrow G.C.;
RT   "Nucleotide sequence and expression in E. coli of a human interferon-
RT   alpha gene selected from a genomic library using synthetic
RT   oligonucleotides.";
RL   Biochem. Int. 8:725-732(1984).
RN   [3]
RP   SEQUENCE OF 24-56.
RX   MEDLINE=98087498; PubMed=9425112;
RA   Nyman T.A., Toeloe H., Parkkinen J., Kalkkinen N.;
RT   "Identification of nine interferon-alpha subtypes produced by Sendai
RT   virus-induced human peripheral blood leucocytes.";
RL   Biochem. J. 329:295-302(1998).
RN   [4]
RP   POLYMORPHISM.
RX   MEDLINE=97474410; PubMed=9335434;
RA   Hussain M., Gill D.S., Liao M.-J.;
RT   "Both variant forms of interferon-alpha4 gene (IFNA4a and IFNA4b) are
RT   present in the human population.";
RL   J. Interferon Cytokine Res. 17:559-566(1997).
CC   -!- FUNCTION: Produced by macrophages, IFN-alpha have antiviral
CC       activities. Interferon stimulates the production of two enzymes: a
CC       protein kinase and an oligoadenylate synthetase.
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- POLYMORPHISM: Two forms exist; alpha-4a and alpha-4b (shown here).
CC       They seem to be equally abundant.
CC   -!- SIMILARITY: Belongs to the alpha/beta interferon family.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; X02955; CAA26701.1; -.
DR   EMBL; M27318; AAA52726.1; -.
DR   PIR; E23753; IVHU4B.
DR   PIR; I52347; I52347.
DR   HSSP; P01563; 1ITF.
DR   Genew; HGNC:5425; IFNA4.
DR   MIM; 147564; -.
DR   GO; GO:0005132; F:interferon-alpha/beta receptor binding; TAS.
DR   GO; GO:0009615; P:response to virus; TAS.
DR   InterPro; IPR009079; 4_helix_cytokine.
DR   InterPro; IPR000471; Interferon_abd.
DR   Pfam; PF00143; Interferon; 1.
DR   PRINTS; PR00266; INTERFERONAB.
DR   ProDom; PD000550; Interferon_abd; 1.
DR   PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW   Antiviral; Cytokine; Direct protein sequencing; Multigene family;
KW   Polymorphism; Signal.
FT   SIGNAL       1     23
FT   CHAIN       24    189       Interferon alpha-4.
FT   DISULFID    24    122       By similarity.
FT   DISULFID    52    162       By similarity.
FT   VARIANT     74     74       T -> A (in alpha-4A).
FT                               /FTId=VAR_013002.
FT   VARIANT    137    137       V -> E (in alpha-4A).
FT                               /FTId=VAR_013003.
SQ   SEQUENCE   189 AA;  21808 MW;  4198F9CC8E2AE80C CRC64;

  Query Match             100.0%;  Score 42;  DB 1;  Length 189;
  Best Local Similarity   100.0%;  Pred. No. 2.3;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        154 LTEKKYSP 161


RESULT 8
INA5_HUMAN
ID   INA5_HUMAN     STANDARD;      PRT;   189 AA.
AC   P01569;
DT   21-JUL-1986 (Rel. 01, Created)
DT   13-AUG-1987 (Rel. 05, Last sequence update)
DT   25-OCT-2004 (Rel. 45, Last annotation update)
DE   Interferon alpha-5 precursor (Interferon alpha-G) (LeIF G) (Interferon
DE   alpha-61).
GN   Name=IFNA5;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=86037205; PubMed=4057246;
RA   Henco K., Brosius J., Fujisawa A., Fujisawa J.-I., Haynes J.R.,
RA   Hochstadt J., Kovacic T., Pasek M., Schamboeck A., Schmid J.,
RA   Todokoro K., Waelchli M., Nagata S., Weissmann C.;
RT   "Structural relationship of human interferon alpha genes and
RT   pseudogenes.";
RL   J. Mol. Biol. 185:227-260(1985).
RN   [2]
RP   SEQUENCE OF 57-189 FROM N.A.
RC   TISSUE=Spleen;
RX   MEDLINE=81148795; PubMed=6163083;
RA   Goeddel D.V., Leung D.W., Dull T.J., Gross M., Lawn R.M.,
RA   McCandliss R., Seeburg P.H., Ullrich A., Yelverton E., Gray P.W.;
RT   "The structure of eight distinct cloned human leukocyte interferon
RT   cDNAs.";
RL   Nature 290:20-26(1981).
RN   [3]
RP   SEQUENCE OF 22-36.
RX   PubMed=15340161; DOI=10.1110/ps.04682504;
RA   Zhang Z., Henzel W.J.;
RT   "Signal peptide prediction based on analysis of experimentally
RT   verified cleavage sites.";
RL   Protein Sci. 13:2819-2824(2004).
CC   -!- FUNCTION: Produced by macrophages, IFN-alpha have antiviral
CC       activities. Interferon stimulates the production of two enzymes: a
CC       protein kinase and an oligoadenylate synthetase.
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- SIMILARITY: Belongs to the alpha/beta interferon family.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; X02956; CAA26702.1; -.
```

```
DR   EMBL; V00541; CAA23802.1; -.
DR   PIR; S43716; IVHUA7.
DR   HSSP; P01563; 1ITF.
DR   Genew; HGNC:5426; IFNA5.
DR   MIM; 147565; -.
DR   GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. . .; TAS.
DR   InterPro; IPR009079; 4_helix_cytokine.
DR   InterPro; IPR000471; Interferon_abd.
DR   Pfam; PF00143; Interferon; 1.
DR   PRINTS; PR00266; INTERFERONAB.
DR   ProDom; PD000550; Interferon_abd; 1.
DR   PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW   Antiviral; Cytokine; Direct protein sequencing; Multigene family;
KW   Signal.
FT   SIGNAL        1     21
FT   CHAIN        22    189       Interferon alpha-5.
FT   DISULFID     24    122       By similarity.
FT   DISULFID     52    162       By similarity.
SQ   SEQUENCE   189 AA;  21942 MW;  C605992FE2E78043 CRC64;

  Query Match             100.0%;  Score 42;  DB 1;  Length 189;
  Best Local Similarity   100.0%;  Pred. No. 2.3;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        154 LTEKKYSP 161


RESULT 9
INA6_HUMAN
ID   INA6_HUMAN     STANDARD;      PRT;   189 AA.
AC   P05013;
DT   13-AUG-1987 (Rel. 05, Created)
DT   13-AUG-1987 (Rel. 05, Last sequence update)
DT   25-OCT-2004 (Rel. 45, Last annotation update)
DE   Interferon alpha-6 precursor (Interferon alpha-K) (LeIF K) (Interferon
DE   alpha-54).
GN   Name=IFNA6;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=86037205; PubMed=4057246;
RA   Henco K., Brosius J., Fujisawa A., Fujisawa J.-I., Haynes J.R.,
RA   Hochstadt J., Kovacic T., Pasek M., Schamboeck A., Schmid J.,
RA   Todokoro K., Waelchli M., Nagata S., Weissmann C.;
RT   "Structural relationship of human interferon alpha genes and
RT   pseudogenes.";
RL   J. Mol. Biol. 185:227-260(1985).
RN   [2]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
RA   Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA   Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA   Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA   Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA   Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA   Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA   Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA   Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA   Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA   Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA   Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA   Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
RA   Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA   Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA   Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RA   Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
RA   Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
RT   "Generation and initial analysis of more than 15,000 full-length human
RT   and mouse cDNA sequences.";
RL   Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
RN   [3]
RP   SEQUENCE OF 21-35.
RX   PubMed=15340161; DOI=10.1110/ps.04682504;
RA   Zhang Z., Henzel W.J.;
RT   "Signal peptide prediction based on analysis of experimentally
RT   verified cleavage sites.";
RL   Protein Sci. 13:2819-2824(2004).
CC   -!- FUNCTION: Produced by macrophages, IFN-alpha have antiviral
CC       activities. Interferon stimulates the production of two enzymes: a
CC       protein kinase and an oligoadenylate synthetase.
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- SIMILARITY: Belongs to the alpha/beta interferon family.
CC   ----------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ----------------------------------------------------------------------
DR   EMBL; X02958; CAA26704.1; -.
DR   EMBL; BC069471; AAH69471.1; -.
DR   PIR; A23753; IVHUI6.
DR   HSSP; P01563; 1ITF.
DR   Genew; HGNC:5427; IFNA6.
DR   MIM; 147566; -.
DR   GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. . .; NAS.
DR   GO; GO:0009615; P:response to virus; NAS.
DR   InterPro; IPR009079; 4_helix_cytokine.
DR   InterPro; IPR000471; Interferon_abd.
DR   Pfam; PF00143; Interferon; 1.
DR   PRINTS; PR00266; INTERFERONAB.
DR   ProDom; PD000550; Interferon_abd; 1.
DR   PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW   Antiviral; Cytokine; Direct protein sequencing; Multigene family;
KW   Signal.
FT   SIGNAL        1     20
FT   CHAIN        21    189       Interferon alpha-6.
FT   DISULFID     24    122       By similarity.
FT   DISULFID     52    162       By similarity.
SQ   SEQUENCE   189 AA;  22140 MW;  8C7F3F90F12C562E CRC64;

  Query Match             100.0%;  Score 42;  DB 1;  Length 189;
  Best Local Similarity   100.0%;  Pred. No. 2.3;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        154 LTEKKYSP 161


RESULT 10
INAG_HUMAN
ID   INAG_HUMAN     STANDARD;      PRT;   189 AA.
AC   P01571; Q14639;
DT   21-JUL-1986 (Rel. 01, Created)
DT   01-OCT-1994 (Rel. 30, Last sequence update)
DT   05-JUL-2004 (Rel. 44, Last annotation update)
DE   Interferon alpha-17 precursor (Interferon alpha-I') (Interferon alpha-
DE   T) (Interferon alpha-88).
GN   Name=IFNA17;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=81201124; PubMed=6165082;
RA   Lawn R.M., Adelman J., Dull T.J., Gross M., Goeddel D.V., Ullrich A.;
RT   "DNA sequence of two closely linked human leukocyte interferon
```

```
RT   genes.";
RL   Science 212:1159-1162(1981).
RN   [2]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=85229953; PubMed=3891272;
RA   Mizoguchi J., Pitha P.M., Raj N.B.K.;
RT   "Efficient expression in Escherichia coli of two species of human
RT   interferon-alpha and their hybrid molecules.";
RL   DNA 4:221-232(1985).
RN   [3]
RP   SEQUENCE OF 14-189 FROM N.A.
RX   MEDLINE=85235859; PubMed=4008999;
RA   Lund B., von Gabain A., Edlund T., Ny T., Lundgren E.;
RT   "Differential expression of interferon genes in a substrain of Namalwa
RT   cells.";
RL   J. Interferon Res. 5:229-238(1985).
RN   [4]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=87024453; PubMed=3767336;
RA   Saveliev V.I., Zlochevsky M.L., Sorokin A.V., Naroditskaya V.A.,
RA   Bolotin A.P., Demyanova N.G., Kozlov Y.I., Neznanov N.S.,
RA   Gazaryan K.G., Monastyrskaya G.S., Sverdlov E.D.;
RT   "[Cloning and the determination of the nucleotide sequences in 2 genes
RT   of human leukocyte interferons].";
RL   Antibiot. Med. Biotekhnol. 31:592-596(1986).
RN   [5]
RP   SEQUENCE OF 24-58.
RX   MEDLINE=98087498; PubMed=9425112;
RA   Nyman T.A., Toeloe H., Parkkinen J., Kalkkinen N.;
RT   "Identification of nine interferon-alpha subtypes produced by Sendai
RT   virus-induced human peripheral blood leucocytes.";
RL   Biochem. J. 329:295-302(1998).
RN   [6]
RP   VARIANT ARG-184.
RX   MEDLINE=98376207; PubMed=9712362;
RA   Hussain M., Tan T., Ni D., Gill D.S., Liao M.-J.;
RT   "A new allele of interferon-alpha17 gene encoding IFN-alpha17b is the
RT   major variant in human population.";
RL   J. Interferon Cytokine Res. 18:469-477(1998).
CC   -!- FUNCTION: Produced by macrophages, IFN-alpha have antiviral
CC       activities. Interferon stimulates the production of two enzymes: a
CC       protein kinase and an oligoadenylate synthetase.
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- SIMILARITY: Belongs to the alpha/beta interferon family.
CC   ----------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ----------------------------------------------------------------------
DR   EMBL; M11026; AAA52725.1; -.
DR   EMBL; V00532; CAA23793.1; -.
DR   EMBL; M38289; AAA59165.1; -.
DR   EMBL; M71246; AAA52713.1; -.
DR   PIR; A01835; IVHUA9.
DR   PIR; I56314; I56314.
DR   HSSP; P01563; 1ITF.
DR   Genew; HGNC:5422; IFNA17.
DR   MIM; 147583; -.
DR   GO; GO:0005132; F:interferon-alpha/beta receptor binding; TAS.
DR   GO; GO:0009615; P:response to virus; TAS.
DR   InterPro; IPR009079; 4_helix_cytokine.
DR   InterPro; IPR000471; Interferon_abd.
DR   Pfam; PF00143; Interferon; 1.
DR   PRINTS; PR00266; INTERFERONAB.
DR   ProDom; PD000550; Interferon_abd; 1.
DR   PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW   Antiviral; Cytokine; Direct protein sequencing; Multigene family;
KW   Polymorphism; Signal.
FT   SIGNAL        1     23
FT   CHAIN         24    189       Interferon alpha-17.
FT   DISULFID      24    122       By similarity.
FT   DISULFID      52    162       By similarity.
FT   VARIANT      184    184       I -> R.
FT                                 /FTId=VAR_013020.
FT   CONFLICT      57     57       H -> P (in Ref. 1).
FT   CONFLICT      78     78       S -> P (in Ref. 3).
SQ   SEQUENCE   189 AA;  21728 MW;  0448EAEAB9D7FC32 CRC64;
```

```
  Query Match             100.0%;  Score 42;  DB 1;  Length 189;
  Best Local Similarity   100.0%;  Pred. No. 2.3;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        154 LTEKKYSP 161
```

```
RESULT 11
INAK_HUMAN
ID   INAK_HUMAN     STANDARD;      PRT;   189 AA.
AC   P01568;
DT   21-JUL-1986 (Rel. 01, Created)
DT   28-FEB-2003 (Rel. 41, Last sequence update)
DT   05-JUL-2004 (Rel. 44, Last annotation update)
DE   Interferon alpha-21 precursor (Interferon alpha-F) (LeIF F).
GN   Name=IFNA21;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=81148795; PubMed=6163083;
RA   Goeddel D.V., Leung D.W., Dull T.J., Gross M., Lawn R.M.,
RA   McCandliss R., Seeburg P.H., Ullrich A., Yelverton E., Gray P.W.;
RT   "The structure of eight distinct cloned human leukocyte interferon
RT   cDNAs.";
RL   Nature 290:20-26(1981).
RN   [2]
RP   SEQUENCE FROM N.A.
RA   Gren E.Y., Berzin V.M., Tsimanis A.Y., Apsalon U.R., Vishnevskii Y.I.,
RA   Yansone I.V., Dishler A.V., Pudova N.V., Smorodintsev A.A.,
RA   Iovlev V.I., Stepanov A.N., Feldmane G.Y., Meldrais Y.A., Lozha V.P.,
RA   Kavsan V.M., Efimov V.A., Sverdlov E.D.;
RT   "A new type of leukocytic interferon.";
RL   Dokl. Biochem. 269:91-95(1983).
RN   [3]
RP   SEQUENCE OF 24-58.
RX   MEDLINE=98087498; PubMed=9425112;
RA   Nyman T.A., Toeloe H., Parkkinen J., Kalkkinen N.;
RT   "Identification of nine interferon-alpha subtypes produced by Sendai
RT   virus-induced human peripheral blood leucocytes.";
RL   Biochem. J. 329:295-302(1998).
RN   [4]
RP   ABSENCE OF POLYMORPHISM.
RX   MEDLINE=97067358; PubMed=8910771;
RA   Hussain M., Gill D.S., Liao M.-J.;
RT   "Identification of interferon-alpha 7, -alpha 14, and -alpha 21
RT   variants in the genome of a large human population.";
RL   J. Interferon Cytokine Res. 16:853-859(1996).
CC   -!- FUNCTION: Produced by macrophages, IFN-alpha have antiviral
CC       activities. Interferon stimulates the production of two enzymes: a
CC       protein kinase and an oligoadenylate synthetase.
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- SIMILARITY: Belongs to the alpha/beta interferon family.
CC   ----------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
```

```
CC   or send an email to license@isb-sib.ch).
CC   ----------------------------------------------------------------------
DR   EMBL; M12350; AAA52718.1; -.
DR   EMBL; V00540; CAA23801.1; -.
DR   EMBL; X00145; CAA24980.1; -.
DR   PIR; A01832; IVHUF.
DR   PIR; I84464; I84464.
DR   HSSP; P01563; 1ITF.
DR   Genew; HGNC:5424; IFNA21.
DR   MIM; 147584; -.
DR   GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. . .; TAS.
DR   InterPro; IPR009079; 4_helix_cytokine.
DR   InterPro; IPR000471; Interferon_abd.
DR   Pfam; PF00143; Interferon; 1.
DR   PRINTS; PR00266; INTERFERONAB.
DR   ProDom; PD000550; Interferon_abd; 1.
DR   PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW   Antiviral; Cytokine; Direct protein sequencing; Multigene family;
KW   Signal.
FT   SIGNAL       1     23
FT   CHAIN       24    189       Interferon alpha-21.
FT   DISULFID    24    122       By similarity.
FT   DISULFID    52    162       By similarity.
FT   CONFLICT   119    119       L -> M (in Ref. 1).
SQ   SEQUENCE   189 AA;  21741 MW;  F0B6C9C392905802 CRC64;

  Query Match             100.0%;  Score 42;  DB 1;  Length 189;
  Best Local Similarity   100.0%;  Pred. No. 2.3;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        154 LTEKKYSP 161


RESULT 12
Q14605
ID   Q14605      PRELIMINARY;      PRT;   189 AA.
AC   Q14605;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   25-OCT-2004 (TrEMBLrel. 28, Last annotation update)
DE   Interferon-alpha 13 precursor.
GN   Name=IFNA13;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=86037205; PubMed=4057246;
RA   Henco K., Brosius J., Fujisawa A., Fujisawa J.I., Haynes J.R.,
RA   Hochstadt J., Kovacic T., Pasek M., Schamboeck A., Schmid J.,
RA   Todokoro K., Waelchli M., Nagata S., Weissmann C.;
RT   "Structural relationship of human interferon alpha genes and
RT   pseudogenes.";
RL   J. Mol. Biol. 185:227-260(1985).
RN   [2]
RP   SEQUENCE FROM N.A.
RA   Rostoks N.;
RL   Submitted (DEC-1993) to the EMBL/GenBank/DDBJ databases.
RN   [3]
RP   SEQUENCE FROM N.A.
RC   TISSUE=PCR rescued clones;
RX   MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
RA   Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA   Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA   Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA   Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA   Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA   Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA   Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA   Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA   Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA   Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA   Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA   Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
RA   Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA   Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA   Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,
RA   Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E.,
RA   Jones S.J., Marra M.A.;
RT   "Generation and initial analysis of more than 15,000 full-length human
RT   and mouse cDNA sequences.";
RL   Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
RN   [4]
RP   SEQUENCE FROM N.A.
RC   TISSUE=PCR rescued clones;
RA   Strausberg R.;
RL   Submitted (APR-2004) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: Belongs to the alpha/beta interferon family.
DR   EMBL; X75934; CAA53538.1; -.
DR   EMBL; BC069427; AAH69427.1; -.
DR   PIR; H42753; H42753.
DR   HSSP; P01563; 1ITF.
DR   GO; GO:0005576; C:extracellular; IEA.
DR   GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. . .; IEA.
DR   GO; GO:0006952; P:defense response; IEA.
DR   InterPro; IPR009079; 4_helix_cytokine.
DR   InterPro; IPR000471; Interferon_abd.
DR   Pfam; PF00143; Interferon; 1.
DR   PRINTS; PR00266; INTERFERONAB.
DR   ProDom; PD000550; Interferon_abd; 1.
DR   SMART; SM00076; IFabd; 1.
DR   PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW   Antiviral; Cytokine; Signal.
FT   SIGNAL       1     23       Potential.
FT   CHAIN       24    189       Potential.
SQ   SEQUENCE   189 AA;  21697 MW;  442F8BB754D88398 CRC64;

  Query Match             100.0%;  Score 42;  DB 2;  Length 189;
  Best Local Similarity   100.0%;  Pred. No. 2.3;
  Matches    8;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              ||||||||
Db        154 LTEKKYSP 161


RESULT 13
Q8R3L0
ID   Q8R3L0      PRELIMINARY;      PRT;   123 AA.
AC   Q8R3L0;
DT   01-JUN-2002 (TrEMBLrel. 21, Created)
DT   01-JUN-2002 (TrEMBLrel. 21, Last sequence update)
DT   01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE   CDNA sequence BC025076.
GN   Name=BC025076;
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=FVB/N; TISSUE=Mammary tumor;
RX   MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
RA   Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA   Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA   Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA   Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA   Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA   Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA   Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA   Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA   Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA   Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
```

```
RA   Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA   Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
RA   Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA   Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA   Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,
RA   Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E.,
RA   Jones S.J., Marra M.A.;
RT   "Generation and initial analysis of more than 15,000 full-length human
RT   and mouse cDNA sequences.";
RL   Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   STRAIN=FVB/N; TISSUE=Mammary tumor;
RA   Strausberg R.;
RL   Submitted (MAR-2002) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; BC025076; AAH25076.1; -.
DR   MGD; MGI:2448491; BC025076.
SQ   SEQUENCE   123 AA;  13922 MW;  3FDDB29CA8FB506D CRC64;

  Query Match             90.5%;  Score 38;  DB 2;  Length 123;
  Best Local Similarity   87.5%;  Pred. No. 9.8;
  Matches    7;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              |||||| |
Db         33 LTEKKYEP 40


RESULT 14
Q8I2S2
ID   Q8I2S2      PRELIMINARY;      PRT;  1104 AA.
AC   Q8I2S2;
DT   01-MAR-2003 (TrEMBLrel. 23, Created)
DT   01-MAR-2003 (TrEMBLrel. 23, Last sequence update)
DT   01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
DE   Hypothetical protein PFI1150w.
GN   Name=PFI1150w;
OS   Plasmodium falciparum (isolate 3D7).
OC   Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium.
OX   NCBI_TaxID=36329;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=22255708; PubMed=12368867; DOI=10.1038/nature01095;
RA   Hall N., Pain A., Berriman M., Churcher C., Harris B., Harris D.,
RA   Mungall K., Bowman S., Atkin R., Baker S., Barron A., Brooks K.,
RA   Buckee C.O., Burrows C., Cherevach I., Chillingworth C.,
RA   Chillingworth T., Christodoulou Z., Clark L., Clark R., Corton C.,
RA   Cronin A., Davies R., Davis P., Dear P., Dearden F., Doggett J.,
RA   Feltwell T., Goble A., Goodhead I., Gwilliam R., Hamlin N., Hance Z.,
RA   Harper D., Hauser H., Hornsby T., Holroyd S., Horrocks P.,
RA   Humphray S., Jagels K., James K.D., Johnson D., Kerhornou A.,
RA   Knights A., Konfortov B., Kyes S., Larke N., Lawson D., Lennard N.,
RA   Line A., Maddison M., Mclean J., Mooney P., Moule S., Murphy L.,
RA   Oliver K., Ormond D., Price C., Quail M.A., Rabbinowitsch E.,
RA   Rajandream M.A., Rutter S., Rutherford K.M., Sanders M., Simmonds M.,
RA   Seeger K., Sharp S., Smith R., Squares R., Squares S., Stevens K.,
RA   Taylor K., Tivey A., Unwin L., Whitehead S., Woodward J.,
RA   Sulston J.E., Craig A., Newbold C., Barrell B.G;
RT   "Sequence of Plasmodium falciparum chromosomes 1, 3-9 and 13.";
RL   Nature 419:527-531(2002).
DR   EMBL; AL929357; CAD51916.1; -.
KW   Hypothetical protein.
SQ   SEQUENCE   1104 AA;  135820 MW;  DFA9B79DB779E707 CRC64;

  Query Match             90.5%;  Score 38;  DB 2;  Length 1104;
  Best Local Similarity   87.5%;  Pred. No. 95;
  Matches    7;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              |:||||||
Db        183 LSEKKYSP 190


RESULT 15
Q8HYG2
ID   Q8HYG2      PRELIMINARY;      PRT;  73 AA.
AC   Q8HYG2;
DT   01-MAR-2003 (TrEMBLrel. 23, Created)
DT   01-MAR-2003 (TrEMBLrel. 23, Last sequence update)
DT   01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE   Type I interferon (Fragment).
OS   Macropus eugenii (Tammar wallaby).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Metatheria; Diprotodontia; Macropodidae; Macropus.
OX   NCBI_TaxID=9315;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=22583464; PubMed=12697149; DOI=10.1016/S1043-4666(03)00029-2;
RA   Harrison G.A., Young L.J., Watson C.M., Miska K.B., Miller R.D.,
RA   Deane E.M.;
RT   "A survey of type I interferons from a marsupial and monotreme:
RT   implications for the evolution of the type I interferon gene family in
RT   mammals.";
RL   Cytokine 21:105-119(2003).
CC   -!- SIMILARITY: Belongs to the alpha/beta interferon family.
DR   EMBL; AF522904; AAO14979.1; -.
DR   HSSP; P01563; 1ITF.
DR   GO; GO:0005576; C:extracellular; IEA.
DR   GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. . .; IEA.
DR   GO; GO:0006952; P:defense response; IEA.
DR   InterPro; IPR009079; 4_helix_cytokine.
DR   InterPro; IPR000471; Interferon_abd.
DR   Pfam; PF00143; Interferon; 1.
DR   ProDom; PD000550; Interferon_abd; 1.
DR   SMART; SM00076; IFabd; 1.
KW   Antiviral; Cytokine.
FT   NON_TER       1      1
FT   NON_TER      73     73
SQ   SEQUENCE   73 AA;  8587 MW;  0480E2E5B26F9ECC CRC64;

  Query Match             85.7%;  Score 36;  DB 2;  Length 73;
  Best Local Similarity   87.5%;  Pred. No. 15;
  Matches    7;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 LTEKKYSP 8
              | ||||||
Db         66 LMEKKYSP 73


Search completed: May 19, 2005, 12:55:07
Job time : 176 secs
```